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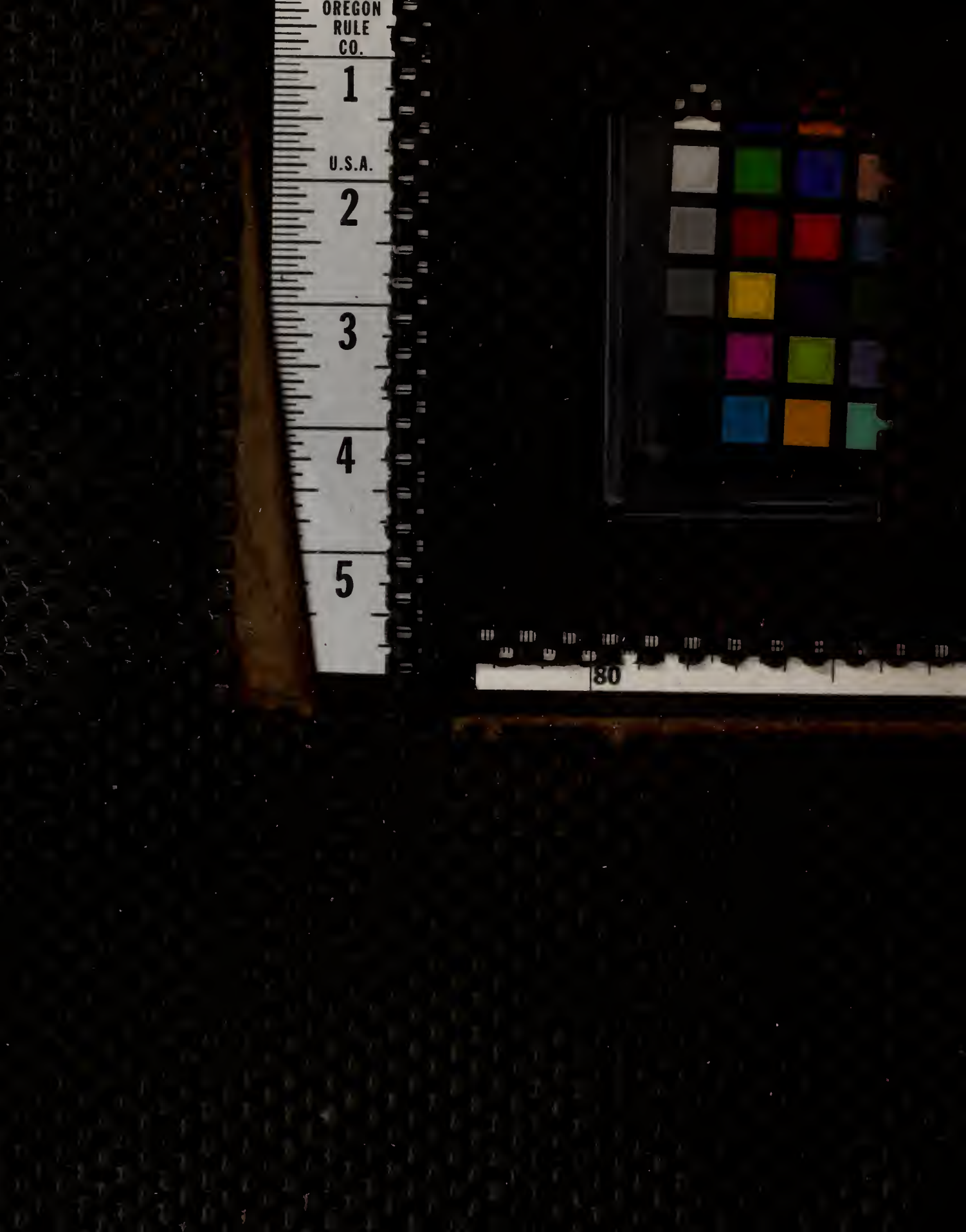
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The TECHNOCRAT

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NEWS MAGAZINE

Whole No. 172

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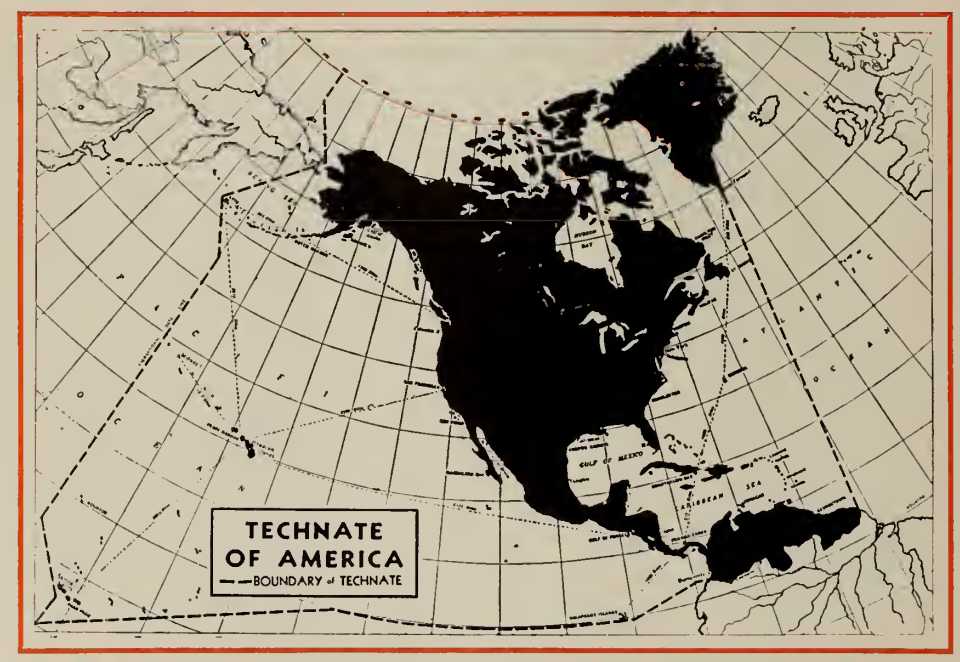
The TECHNOCRAT

DECEMBER, 1954

CONTIGUOUS CONTINENTALISM



Soviet Russia has become by historical accident a contiguous continentalism of 8,200,000 square miles. It is the largest single territory operated as an economic and political organism by a centralized social control. This Russian continentalism is, in spite of all its national, social, political and military achievements, still in a backward state of development, but potentially in the years to come the Russian continentalism holds more promise than any other area on earth except the continent of North America. . . . Technocracy wishes to point out that, while United States and Canada possess the necessary plant, equipment and personnel for this greatest of all social achievements, Soviet Russia lacks the equipment and sufficiency of trained personnel. United States and Canada have everything required for the technological achievement of this social design except the national will. The U.S.S.R. already is a consolidated contiguous continentalism and possesses a national will to create in its territory a Russian social objective for the Russian way of life. They lack only the time, the technological equipment and a slight addition of trained personnel.

It is a race as to whether United States and Canada can generate a national will great enough for the achievement of the social destiny of this Continent before a backward Russia exceeds us in its national development. In this modern world where technology can be brought in to be the dominant force for social change and betterment, only a contiguous continentalism can compete with a contiguous continentalism for the social leadership of the world. Technocracy has been the voice crying in the wilderness all these many years for the consolidation of the North American Continent into a single economic organism, a contiguous continentalism 2,000,000 square miles greater in area than the U.S.S.R.

—Howard Scott

DEC., 1954

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Whole No. 172

TIME FOR REPUDIATION

'Surpluses' that cannot be distributed to the needy consumers under the Price System are being withdrawn from the channels of distribution and being destroyed, let spoil, or dumped on foreign soil. Yes, it is time for repudiation; and the stage is set for it.

The idea of change has an appeal deep-rooted in human nature. In spite of the more dominant tendency to resist change, there does appear to be a chronic urge to change *something* in one's life; it is an expression of one's desire for adventure. This urge is stronger in some persons than in others, and it takes many different forms, varying with different individuals. In general, it is more prevalent in the young than in the old. Some seek to satisfy this urge by traveling to new places or making occasional return visits to 'old' places. A classic example of the urge is the housewife's periodical changing around of the furniture. Redecorating and remodeling of one's dwelling is usually motivated, at least in part, by this desire for change. Changes in styles of clothing, of gadgets, of popular music, of recreational patterns, or the color of one's hair are all symptoms of the urge for adventure — the desire for change.

Changes in one's life serve as milestones and landmarks which make one's life experience seem longer and more eventful. Thus, the slogan, 'It's Time for a Change,' attracts many followers regardless of its objective. The urge receives added stimulus when the prevailing situation is exasperating, uncomfortable, or boring.

This common urge for change among the American people has been largely captured by the wolves and jackals of commercial promotion, and much of it has been exploited for financial gain by business interests. More than that, the desire for change has been synchronized with the desire to be important in many promotion techniques. Hence, the new gadgets or styles do not serve merely to provide change, but they also have prestige value. Insofar as the promoters are concerned, the whole objective of change is to increase sales. Whether or not the natural human desire for change is provided with facilities for expression or is pleasantly satisfied is of little concern to business so long as the wealth and credit of the customer can be extracted.

Most expressions of the urge for change are of a superficial and harmless sort. However, one common form that provides many dramatic and climactic side-effects is one's seeking change in the field of sex relations. For the most part, a little travel, some changes of gadgets, periodic alterations in the dwelling, keeping up with the style changes in clothes and automobiles, a little philandering, and perhaps an occasional change of jobs generally serve to satisfy (or at least appease) most people's desire for change.

Those changes that follow a social pattern and involve large numbers of people are usually promoted rather than generated by spontaneous initiative. We have already indicated that many changes are promoted by commercial interests. Changes in the administrations of institutions and of political entities are usually promoted by someone or some group with a direct economic or prestige interest in the change. The promoters of changes in administrative regimes often resort to all the means of persuasion known to man to induce others to follow them — promises, threats, intimidation, whispering campaigns, arousing of emotional hopes, fears, desires, hates, and prejudices. In extreme cases, the followers of one faction or the other are organized and trained to belabor the followers of the other side with weapons of the utmost destructiveness; this is called war. Modern wars between nations require long periods of preliminary promotion, because of the complexity of the operations and the millions of people who are required to participate, and because of the general abhorrence of people for war (as such). Even such minor changes, or proposed changes, as styles in clothing, hairdos, or automobiles undergo considerable promotion and ballyhoo prior to their release to the public.

On the collective level, changes in political design, economic systems, or in church dominance must be promoted and sponsored against the most bitter kind of opposition. The longest and cruelest wars in history have been over differences of economic, political, or ecclesiastical designs. For more than thirty years now, the great struggle between the East and the West has involved all three as the basic factors, with the principle of the Spoils System providing much of the superficial motivation.

Not all promotion and agitation is for change, however; a much greater effort is usually expended to avoid or frustrate changes. Any form of status quo that has endured for a generation or more has acquired strong supporters and staunch defenders. By that time, proprietary rights have become established; and more self-righteous indignation, stubborness and courage can be generated in support of property rights than, perhaps, any other objective. Thus the fights for social change usually form alignments between those who have acquired property and those who have not. The status quo regime that

concentrates the property of the area into too few hands becomes especially vulnerable to social upheaval; for, as the have-nots greatly outnumber the haves, the balance of power tends to shift to their side; and, with some incident to spark it, the situation can be instigated into a social revolution. Most of the successful political revolutions of the past few generations have had such a balance of power in favor of the have-nots; and the fights have been drawn up between the property owners and their mercenaries on one side and the ownerless class on the other side. Such fights tend to be exceptionally cruel and bloody, especially if they are indecisive.

Change Is Usually Stymied

In the United States today, it is practically if not absolutely impossible for a community or group to organize itself on a different pattern than that generally accepted with respect to religion, economics, or politics — especially economics. We know, for example, of a community of student veterans following World War II, most of them married with families, who attempted to set up a community grocery store for themselves, to be operated without profit. It was stymied by every device for oppression known to the status quo, ranging from business boycott to judicial 'restraint.' The same fate befell a community of tenants in a 'surplus' housing project owned by the government at the end of the war. They wanted to buy up the houses they lived in at surplus disposal rates, the whole community to be owned and operated as a collective unit. Nobody, from the local merchants to the federal government, would tolerate such a radical idea as collective ownership by consumers. Collective ownership and operation by investors is okay, though; that is 'respectable.'

All this fine talk in America about freedom, opportunity, and the dignity of man is just so much deceptive soporific for the morons who don't know any differently. Talk it all you want; but, beware, don't try putting any of it into practice.

We Americans pretend to be very indignant about the fixed elections in totalitarian countries, where the status quo makes sure in advance that there will be no change of political regimes. Our Side goes through the act of providing a choice between two or more regimes, using only threats, promises, and slander to influence the citizen's choice. Then, if the people do get so enthusiastic about freedom as to vote for the regime of their choice, in opposition to the established regime of the status quo, the peoples' choice is then put down with a coup d'etat and force of arms, and the status quo is maintained. Witness Spain, Venezuela, British Guiana, Pakistan, and Guatemala, as a few examples. The same thing would happen in Italy or France if the Other Side should win a free election. And we can name other de facto and potential examples. American freedom is similar in kind to that reportedly granted by Henry Ford to his Model T customers: 'You can have any color you want, provided it's black.' Yes, Americans, you have freedom to choose, but you had better choose black — the symbolic color of fascism.

The seeds of organized change are almost always sowed and cultivated behind the backs of the people; and, when the basis for the change is more or less firmly implanted, the people are called upon to support the change, either by positive acclamation or through rebellion against the status quo, usually a combination of the two. A certain number of changes do succeed. As a consequence, political regimes have zig-zagged from one faction to another; religions and deities have come and gone; customs, styles, and superstitions have been altered. Most of these changes have been of a superficial nature, affecting the efflorescences of societies rather than the fundamental structure.

The resultants of the changes of the past have rarely if ever lived up to their advance billing. But the process of attempting to institute or frustrate the changes have frequently decimated the population and despoiled the tangible property of an area. Most of the changes for which people have been called upon to sacrifice, bleed, and die, have not been worthy of passing notice in themselves. Usually nothing more is involved (as it turns out) than the personal fortunes of a few individuals. However, the people at large are seduced in advance into believing that there is something in it for them. The double-cross comes after the major action has passed the decisive stage. It is safe to say, few people would have joined the great 'crusades' of history if they had known in advance what the outcome would be.

Few Successful Reforms

Compassion for one's fellowmen appears not to be a dominant characteristic of human nature; although a substantial biological basis for it has been laid in connection with family life through milleniums of social evolution. The tendency of the individual to look out for 'Number One' first obviously takes precedence over the welfare of others; and any inherent tendency to sponsor the welfare of others takes a serious setback when property and wealth become an issue in the process. Thus, human societies have become organized as much, if not more, to promote the prestige and wealth of a few dominant personalities as to provide for the security and comfort of the many. So, in any human society, there are plenty of inequities and chicaneries to serve as bases for social reforms.

No doubt, many proposed and attempted reforms of the social structure and its operations have been instigated by perfectly sincere individuals, who were attempting to do what they thought would improve the circumstances of their fellowmen. Too often these attempts were snarled up with philosophical and moralistic concepts and beliefs, which made them unworkable even if there had been no interference. A great many proposed reforms, however, have been advanced and promoted by opportunist charlatans who hoped to ride the crest of the reform

movement to their own glory and, possibly, wealth. Most Americans can recall to mind a number of proposed tax reforms, redistribution of the wealth schemes, psycho-mystical theories of improving the physique and mind of the individuals and thereby reforming the society, moral, drug, and liquor prohibition manias, as well as more basic political and economic changes, which have been promoted during recent decades. It is evident, some of the prime movers of these movements were sincere and honest in their motives and practices, while others just as obviously were ambitious for personal gain. Here is one for the notebooks: If the leader of a reform movement seeks to run for political office on the strength of his position in that movement, you can be pretty sure that personal ambition is dominant over compassion for others and that the reform movement is primarily a vehicle for that personal ambition.

Continuous Attempts

As we have indicated earlier, there are plenty of things on which a rebellion of the people against the status quo could be founded. And there are any number of things that none but a servile people would tolerate. But it so happens that the great bulk of the people of North America, like those of other lands, are servile and would not rebel against anything except under conditions of aggravated provocation.

Many attempts have been made to visualize and depict the Ideal Society; but these have all been limited in their concepts by the social conditions and knowledge of the time. Thus, all the Ideal Societies, from Plato to Edward Bellamy, suffered from the limitation of the technology which prevailed in the days of their introduction. This is due to no fault of the authors, but is due to the circumstances of their time. In these days of rapid technological progression, one feels little confidence in his ability to forecast the future changes that would accompany the inauguration of a New Age society. Besides the external limitations, the depiction of any Ideal Society is bound to be drawn in the pattern of the author's subjective desires, hopes, and fears.

Thus, Technocrats do not attempt to describe in detail the society of the New America, restricting themselves to the presentation of the major specifications. As new knowledge and new techniques are acquired in various fields, details of a social pattern must be changed to accommodate those discoveries and developments. Therefore, the concept of the New America must remain generalized and flexible in its specific applications and not become crystallized into any rigid pattern that would be subject to obsolescence.

One effect of the Ideal Societies has been the impression they have made on the literate few that human beings could be socially organized in a far more efficient and happy design than the one that prevails. Whatever the faults of the Ideal Societies, they do stimulate the imagination and broaden the range of social concepts among the erudite. However, it must be apparent that none of them could be established under or within the Price System. The only chance for Utopia to succeed would be for it to quickly acquire sufficient numbers and strength to eradicate ruthlessly all traces of the Price System in its area and prevent any further intrusions. That is a very big order and we can imagine no condition under which it might succeed today.

Any social system, real or imagined, that operates under a Price System can be suspected of corruption — whether that system be called fascist, republican, democratic, socialist, communist, or bolshevik. Whatever intent or opportunities there may be at the outset, corruption and tyranny are sure to develop if the primary elements of the Price System remain. This is aptly illustrated in George Orwell's 'Animal Farm,' albeit in an imaginative way.

A 'Peoples' Revolution' may liquidate the bourgeoisie; but the advantages gained thereby are of little permanence if the soil which breeds and nourishes the bourgeoisie is left intact or only turned over. Let them abolish the system which spawns the bourgeois culture and it will not be necessary to liquidate the persons which comprise the bourgeoisie. For, without social manure piles from which to sap nourishment, the orchids of the Price System would 'just fade away.'

Technology Implements Revolution

The greatest social revolution of all time was not an organized and promoted affair; rather, it was a subtle infiltration that changed everything it touched. Although it was recognized as a deadly plague by the Authorities of the status quo and was fought most bitterly, this revolution seeped through Europe and spread to many other parts of the world, destroying all that the Old Order held sacred and creating a far brighter new order of the opposite kind. The vehicle for that revolution was the Scientific Method; and its means of social change was technology. Everyone who scrutinized some detail of nature and formed conclusions from his observations rather than from the textbooks of Authority was an agent of this revolution and, thereby, an enemy of the status quo. Likewise, anyone who conducted experiments with natural phenomena, or who sought to invent new devices or materials to serve some human purpose more effectively, was in the forefront of the revolution. This revolution of which we speak had its beginnings some three hundred and fifty years ago, and it is still in progress. In fact, it is now at the decisive stage.

Until yesterday, the Old Order, with its barbaric vehicle, the Price System, could adjust to and even utilize the innovations of science and technology, although its proponents hated like everything to make those adjustments. Now, on the Continent of North America, the revolution has progressed to the stage where adjustments within the framework of the Old Order no longer suffice. This new and unique condition has been brought about by the development of a technological capacity for the pro-

(Continued on page 15)

Why Doctors CAN'T 'Clean House'

Labor, Oct. 9 — Unconscionable greed and selfishness among many American doctors, including supposed leaders in the profession, are devastatingly exposed in an article in the current issue of Pageant magazine. Written by Merle Miller and based on months of investigation, the article is entitled "Why Don't Doctors Clean House?"

Labor has reported in the past on many of the practices discovered by Miller. But the Pageant article summarizes the whole spectrum of medical greed. . . .

. . . 1. Fee splitting. This means that your regular doctor takes an under-the-table "cut" of the fee you pay the surgeon to whom he has recommended you for an operation. Ever since 1903, Miller found, fee-splitting "has been denounced in high-sounding American Medical Association resolutions. Yet it is today more prevalent than ever before.

"In one Manhattan hospital I was told that 80 percent of the surgeons split their fees. Unscrupulous general practitioners often refer all their patients to the surgeon who gives them the largest part of the swag. The fact that the surgeon may be incompetent is incidental."

2. Unnecessary surgery. An official of the American College of Surgeons, the surgeons' professional association, told Miller that out of the 10 million major operations performed in America every year "from one third to a half cannot be justified medically."

Reprehensible? — No, Ethics!

3. Ghost surgery. "This means," Miller reported, "that when the patient is under ether, the doctor who has promised to perform the operation and is being paid for it slips out of the operating room and is replaced by another surgeon or possibly even a medical student. When the patient regains consciousness, the first doctor is again at his side, and the patient himself never realizes the existence of a ghost." The "ghost" may be a good or a bad surgeon — but he's not the one you paid for.

4. Tie-ups with private drug firms. "This particular activity," Miller noted, "begins at the top of the medical profession and extends to the bottom." He pointed out that the AMA must approve all new drugs, and that the AMA Journal also sells advertising. "Not surprisingly," he found, "this dual relationship has resulted in considerable criticism, particularly from smaller drug firms which do relatively little advertising."

Moreover, Miller pointed out, "drug firms with new products to peddle send hundreds of thousands of dollars worth of 'free samples' to cooperative doctors. The doctor, often without proper tests, recommends the drug to his patients."

5. Restricting medical care. "For 10 years now," Miller observed, "it has been apparent that less and less medical care is available to fewer and fewer Americans. Large segments of the population simply cannot afford a doctor." Despite this, the AMA fought tooth and nail against national health insurance.

"The AMA has spent millions of dollars telling Americans that the plan was socialistic," Miller noted. "It spent additional millions lobbying against it in Congress. At the same time, AMA spokesmen kept promising that the AMA would bring out a plan of its own to extend medical benefits."

Instead, Miller discovered, "the official spokesmen for the profession, officers of the AMA, have not only opposed every proposal for governmental health insurance but are increasingly fighting private health insurance plans as well."

How can this pot of greed — which has so corroded the medical profession's great tradition of unselfish service — be cut out and destroyed? Miller concluded that it's up to the doctors themselves. He quotes a distinguished young surgeon, who told him: "The working doctor has been so busy he's let the non-practicing professional medical politician take over. We've got to change all that; we've got to clean our own house."

Editor's Note: Price System medicine is primarily a business and only secondarily a public service; and what's good for business is never good for the public. Should the individual doctor become so 'radical' as to want to 'clean house' himself, he will soon be 'brain washed' — by his socially ambitious wife if nobody else.

Labor, Oct. 9 — The Committee for the Nation's Health, a nonpartisan organization, this week published a list showing the 15 health bills which were introduced in Congress this year, who supported them, who opposed them, and what happened to them.

All the way down the list, one phrase appears again and again: "Actively opposed by the American Medical Association." Almost without exception, that "Organized Doctors' Lobby" fought the health bills — including five proposed by the Eisenhower Administration.

Pertinent Paragraph

Pittsburgh (UP) — Nearly 2,000 unemployed men swarmed to the hamlet of Donaldson's Crossroads 20 miles away. They clamored for jobs as laborers on a trolley track removal project for which only 50 workmen were needed.

Attracted by a three-line help wanted ad in several area newspapers, the job seekers milled around a highway intersection for hours.

PRICE SYSTEM BLUES

Small operators are finding it increasingly hard to compete. Expensive equipment is as necessary for a half section of land as a whole section. With the acreage allotments now in effect, small farmers are hit the hardest, while having little effect on the big operators.

The shift in the material circumstances of the American people from the 1890's to mid-twentieth century has been all but convulsive. From an agrarian to an industrial society, from human toil to extraneous energy, to automation in 60 years, after centuries of slow progress, is some record!

The year 1910 saw the greatest volume of employment for human labor in our history. Since then the replacement of man-hours with kilo-watt hours has increased at an accelerating rate. Soon push-button factories and fully mechanized farms will be the rule rather than the exception.

In ancient times, man did indeed have to earn his living by the sweat of his brow. But his native intelligence found ways of improving his implements and domesticating animals whose strength exceeded his own, thereby lightening his labor. Progress was comparatively slow, however, until the 19th Century, when the invention of the steam engine and electric motor revolutionized industry. New manufacturing ventures sprang up; new jobs were created. Transportation facilities multiplied, opening new territories for expansion and, incidentally, exploitation. Labor organized its skills, improving the economic status and bargaining power of members.

Electronics Revolution

Electronics, radar and jet propulsion signify the arrival of a second industrial revolution, wherein human labor is being all but eliminated in the installation of automatic devices that replace more and more man-power.

On the nation's farms, as well as in her factories, the irreversible trend is toward more and more production with less and less work.

Away with the two-story barn, the upright silo, the old milkhouse. The ultra-modern Mrs. Cow loafs in a one-story barn, entirely open on one side. When hungry, Her Cowship saunters over to a low bunker-type silo, open at both ends, where she helps herself. She is milked in a separate building with a milking machine, the milk flowing directly, by pipeline, into a refrigerated tank in the same building. From the tank it is later pumped into a tank truck and taken to market.

The very latest innovation is a swivel chair, set in a shallow cement pit. From this seat the operator can open or close the barn door to let the cows in or out, measure proper amount of feed into feed troughs, wash udders and attach teat cups to two cows at a time. All installed and ready for use for only 1750 smackers.

Poultry men find that prefabricated hen-houses with new type ventilating and feeding arrangements produce healthier flocks and more eggs per pound of feed consumed.

Multi-purpose sheds for storing farm machinery, grain, and even as temporary housing for animals are a good investment.

Another noticeable trend is the drift toward fewer small farms and small businesses, and an increase in size of farms. Large tracts of land have been acquired by bankers, money-lenders and prosperous neighbors during times of depression and drouth.

New power driven machines that plant, cultivate and harvest and even store grain, potatoes, corn, cotton and other crops can be purchased at top prices, provided one has plenty of cash or credit.

A corn harvester in operation. This type of mechanization is becoming more necessary for the small operator in order to meet competitive methods of operation. (Photo, courtesy Case).

Small operators find it increasingly hard to compete. Expensive equipment is as necessary for a half section of land as a whole section. With the acreage allotments now in effect, small farmers are hit the hardest, while there has been little effect on the big operators.

Wheat allotments are determined for individual farms on the basis of the 1952-53 planted acreage on the farm. In some sections of the U. S. such as Kansas, about half the acreage is ordinarily planted each year, leaving the rest fallow to build up the soil for future crops. The acreage cuts work a hardship on little fellows, because in some places little else can be grown on the diverted acres.

One farmer suggested putting in bushel limits instead of acreage limits. Thus, if he were allowed to raise 10 bushels per acre and got 15, he could store the extra wheat at his own expense. Then if next year's crop was poor or washed out, he could present his stored wheat for sale and not be completely ruined.

As of August 1st, the U. S. Government owned 764 million bushels of wheat. Present pile is about 100 million bushels more than the entire nation consumes in one year. The total consumption of wheat is about the same as it was in 1935-39, while population has risen 25 percent.

Up to July 31st, (end of marketing year) United States had sold only 55 percent of wheat assigned for export under the International Wheat agreement. Congress passed a bill permitting President Eisenhower to sell or give away up to $1 billion in surplus farm goods during next 3 years. But Assistant Secretary of State Morton warns against "dumping" of goods in European and other markets because of the possible impact on other exporting countries. He explained that agriculture plus our political and military elements "add up to American foreign policy."

Recent barter deals between Canada, Australia, Japan and Germany demonstrated the fact clearly that the world needs grain but cannot pay dollars for it.

The U. S. farm supports have held domestic prices above world market levels. We sold abroad at an average of 60 cents per bu. below domestic prices. The Dept. of Agriculture made up this deficit in the form of "export payments" to exporters.

U. S. and Canadian Crop Surpluses

Canada reduced her grain prices twice last year and will cut prices again if necessary to keep Canada competitive.

Canada's unsold surplus July 31st was about 565 million bushels. Her 1954 crop was expected to yield 450-500 million bushels. Based on this trend, she would have more than 1 billion bushels of wheat on hand.

What of distribution? Last year she exported to the United States 7,700,000 bushels. 201,200,000 bushels went overseas. 101 million bushels were used in Canada or milled for export flour.

Farmers in U. S. in '54 put about 5 million less bushels of wheat under price-support loans and purchase agreements than in '53. But they planted near-record amounts of oats, barley, rye, flaxseed and grain sorghums on the diverted acres, thus creating new surplus headaches.

No Controls Indicated

Besides reducing wheat acreage, a 14 percent reduction was placed on corn and cotton. In the corn-belt, an early estimate indicated a bumper crop, but drouth conditions at the critical stage of growth caused a set-back, so that no controls are indicated for next year.

The cotton crop, in spite of cut-backs in acreage, amounted to about 12 billion bales.

Whenever expected output, plus unused cotton from other years, plus imports, exceed a year's needs by 30 percent, new marketing quotas must be voted upon by the growers. The carry-over is about 9.8 million bales, imports total 200,000 bales per year. Total cotton supplies reached about 22.7 million bales in 1954-55 marketing year, beginning Aug. 1st.

Soy beans, onions and peanut crops fell below last year's crop, partly due to drouth.

The burning question with farmers has been, what to plant on those acres diverted from wheat. Other grains planted last spring became surplus crops, requiring further price supports and storage space.

Representatives from the U. S. Dept. of Agriculture have been searching the world over for new varieties of plants, and experimenting with them as possible future crops that may prove profitable to farmers and useful for industry. Among these, soy beans were imported from Asia and combined with existing strains. They are now a billion dollar crop. They are used as livestock feed, and the oil as base for salad oil and margarine, also for lubricating oils.

The castor bean, now grown in the South and Middle West, is rapidly gaining as a commercial crop. It yields an oil used in mixing plastics, and in hydraulic fluids.

Safflower, from the Mediterranean region, can be grown in Pacific coast states and northern great plains. The oil is used in mixing paints and varnishes.

Sesame, imported from Latin America, yields a seed used on bread and rolls, or as an oil for candy. A sesame-harvesting machine may make this crop ready for more wide-spread cultivation.

The oil from the Joyjoba bush can be used for making printing inks and furniture polish.

New kinds of fibers for making paper are much in demand.

Many new crops are designed to produce drugs for medicinal purposes. Rauwolfia surpentina is claimed to be a new weapon to combat high blood pressure and other circulatory ailments.

Cortisone, for treating arthritis, was first produced from animal glands. Chemists have produced

(Continued on page 20)

Political Americana

More Ulcers

United States Dept. of Agriculture, Washington — Secretary of Agriculture Ezra Taft Benson urged food trade organizations to give their full support to a beef promotion campaign to start immediately and continue to Thanksgiving, reaching its high point in a combination beef-and-vegetable drive from Sept. 30 to Oct. 9. The campaign has been developed and recommended by livestock, vegetable and trade groups.

. . . As was the case last year, cattle supplies are at a high level, and generous supplies of beef will be available during the coming months. Early fall prospects are for liberal supplies of potatoes, onions, and many other handy vegetables.

Secretary Benson said the Department will aid the industry promotional efforts through continued work with food trade groups throughout the country, while informational and educational activities will be intensified to *command additional consumer attention.* He . . . expressed *confidence* that the merchandising efforts can contribute significantly to the solution of marketing problems of these industries.

Editor's note: The American consumer has become the target of all of the conflicting interests of the competitive Price System. The harangue is endless: Buy this car; buy that car; buy foreign goods; don't buy foreign goods, buy American; buy a new home; buy the latest gadget, who wants yesterday's model; eat more food; don't eat so much, consume a pill instead; buy! buy! buy! And then someone comes out with the old adage "save for a rainy day." Is it any wonder our mental institutions are crowded?

Involuntary Death Throes

San Francisco, Sept. 17 (UP) — The United States is giving the world's colonial people the choice of remaining "slaves under the dominant European nations, or going with the Communists," Sen. George W. Malone said today.

In a speech before the Commonwealth Club here, Malone called for a "good square look at our State Department's aimless wanderings throughout the earth."

Malone declared that the United States must stop defending a dead colonial system supporting England and France and halt the spending of billions of dollars of the taxpayers' money in Europe and Asia without a return of any kind, not even friendship.

Editor's Note: The American politician will always sell out his country and his people for nothing.

'Accusations Anonymous'

Labor, Sept. 11 — For nearly 23 years, Abraham Chasanow worked as a Navy civilian employee. He rose to a $160 a week job in the Navy map service. He married, had four children, lived in Greenbelt, Md., a Washington suburb. Then suddenly, 13 months ago, the Navy suspended him as a pro-Communist "security risk."

Chasanow decided to fight it. He was a civic leader, strongly anti-Communist — the prominent people in his community all swore to that. But for 13 months Chasanow lived through a nightmare. He had to hire a lawyer, his pay stopped, he wondered how he could feed and clothe his children.

Last April a Navy board found him guilty as a "risk." He was fired. Then Chasanow and his lawyer put their case to the press. Assistant Navy Secretary James H. Smith, Jr., agreed to re-investigate.

The other day Smith held an unprecedented press conference of his own. Chasanow's anonymous accusers, on requestioning, had been unable or unwilling to back up their charges. A "grave injustice" had been done Chasanow, Smith told reporters. The Navy would reinstate him with back pay and would change its security procedures. Chasanow's long nightmare was over.

Newspapers all over the nation commented on the case. They praised Smith for admitting error. But the crux of the problem, they pointed out, comes from relying on anonymous accusers, perhaps motivated by personal malice or prejudice. Chasanow chose to fight, but how many other innocent victims gave up without a struggle, feeling their cause was hopeless?

"In security cases," the Scripps-Howard Washington Daily News noted, "charges are based on unsworn statements by accusers whose names are often unknown even to the boards making decisions. The accused man has no chance to cross-examine these informants; often he is not even told fully what they said."

Chasanow's case, moreover, is far from unique. Only this week the Army announced it had reinstated the 21st man out of 38 suspended at Fort Monmouth, N. J., during Senator McCarthy's investigation there last year. These men faced the same problems of anonymous accusers, vague charges and loss of pay as Chasanow did. The New York Times commented that "the Army can no more afford to pass off this situation lightly than the Navy could in the Chasanow case."

"Obviously security against subversion in the government is necessary," the Times pointed out. "But so is security of the government employee or private citizen against the abuses of the anonymous

informer, the slanderer, the personal enemy, and the over zealous prosecutor who interprets the slightest trace of non-conformity as a risk to the national security."

Editor's Note: The anonymous accuser is a favorite instrument of the Inquisition. Is America adopting the technique of Catholic fascism?

Small Wonder

New York, Nov. 9 (UP) — Albert Einstein, whose mathematical powers helped produce the atom bomb, said today that if he had it to do all over again, he would be a plumber or a peddler. . . .

LABOR, June 12 — Does the Administration's "security risk" program actually help or hinder America's national security? Leading scientists and daily papers posed that question this week, as an aftermath to the decision by a special three-man board holding that Dr. J. Robert Oppenheimer, the *"man who made the A-bomb,"* is now a security risk.

The board unanimously found that Oppenheimer has been both completely loyal to America and unusually discreet in guarding secrets. Nevertheless, two of the three board members said he should be forbidden further access to atomic secrets, as a security risk.

A major reason for this finding, the members indicated, was because they thought Oppenheimer had not been sufficiently "enthusiastic" about the H-bomb, either before or after President Truman's decision to go ahead with an H-bomb program in 1949. *Another count against him was that he failed to show "enthusiastic support of the security system."*

Following this decision, ten leading scientists — all officers of the Federation of American Scientists — wrote President Eisenhower a blistering letter. "The purge of a loyal scientist for giving frank advice," the scientists declared, "presents a grave peril to our nation.

"Such a policy, if continued, will eliminate the men of independent mind from our defense establishment. In this age, when new weapons repeatedly dwarf the destructive power of their predecessors, this is a sure road to national suicide."

The scientists asked Ike to re-examine the security system, which has already, they said, "severely damaged the vitality of scientific research and development." This is the same new security system under which the Administration has boasted of getting rid of 2,400 "security risks." Major newspapers have shown up that boast as "phony."

Newspaper comment on the Oppenheimer case generally expressed the same views the scientists did. Few condemned the members of the board making the decision. But many declared something was wrong with the security system.

The New York Times pointed out the board members had said they might have cleared Oppenheimer "if we were allowed to exercise mature practical judgment." But the security system's "rigid regulations and criteria" forbade that.

The conservative Milwaukee Journal commented: "If the rules require such disposition of the case of a man of admitted loyalty, it is time to change the rules." And the Denver Post asked: "Has fear become our master?"

Also, many newspapers and scientists raised the question whether the action in the Oppenheimer case may not jeopardize America's lead over Soviet Russia on the atomic front.

The Atomic Energy Commission, meantime, agreed to review the Oppenheimer case, amid indications that its five members are badly split on the subject.

Editor's note: The final decision was 4 to 1 against Oppenheimer, the lone dissenter being the only scientist on the Commission.

Aftermath

Between 1950 and 1953, 30,000 babies have been born in Nagasaki, Japan. Of these, 4,400 were still-births, and that includes 479 babies born in just one week. That means that about one-seventh of all the babies born in Nagasaki between 1950 and 1953 were still-births — a very high percentage. There is another and even more frightful chapter: During this same three-year period in the city of Nagasaki, 3,630 new-born babies were deformed, many of them virtual horrors. This means that in that one atom-bombed city in the years 1950 to 1953 over 8,000 babies were either born dead or deformed — more than 25 percent of all births there. These figures are current up to June 25, 1954, and are known to the U. S. A-Bomb Casualty Commission, as well as to the Japanese themselves. (Frank Edwards, in Frank Edwards Says, in Southern California Teamster, Vol. XIII, No. 30, July 14.)

Editor's note: The above information was not given much, if any, space in the daily newspapers.

Computors Cause Headaches

Milwaukee Journal — Electronic computers are opening up new fields of importance for the accountant but might also cause him new headaches as well.

Writing in the July issue of the Journal of Accountancy, Joseph Pelej, a partner in Price Waterhouse & Co., accounting firm, warns of opportunities for fraudulent manipulation of records in operating one of the high speed computers.

One of the solutions, he predicts, "will probably be a control system independent of the machine." And he recommends that auditors become familiar with the operation of electronic computers and develop suitable accounting controls.

TROUBLE IN PARADISE

The Hawaiian Islands are often referred to as the 'Paradise of the Pacific' and well they might be-cause of the balmy climate, waving palms and gentle winds. However, economically, there is plenty of 'trouble in Paradise', for Hawaii is suffering from that same fatal disease — abundance — which is plaguing the rest of North America. In the case of Hawaii it is a surplus of pineapples and people and a scarcity of jobs. Interestingly enough, the seriousness of the unemployment situation isn't buried in the back pages of the newspapers; instead it is front page news and the businessmen, bankers, politicians, professors (economists, that is), and labor leaders are busy beating their breasts in public about how they 'want to solve the problem.' Of course no one has a solution — but when did such a small technicality as that deter these Price System chiselers from capitalizing on calamity?

It seems that unemployment, which was only 8,000 a year ago, has climbed to over 12,000 now and is expected to go to 15,000 by October when *it is hoped* that it will level off around January, 1955 at 16,000. However, it is conceded that it will probably rise again in the spring. Hawaii has a unique problem, because more than half of the population is under 25 years of age, about 5,000 new jobs *annually* will have to be provided to keep pace with the young people who will be looking for their first jobs. Over one-third of the 1952 high school graduate crop have not held a job. The unemployment insurance bill of $400,000 a month which the Territory pays out is one of Hawaii's biggest payrolls. One un-named labor official is quoted as saying, "There are too many people in Hawaii. Something has to give. Either we make new jobs or the people leave." Meaning, of course, that the U. S. mainland would be called upon, as in the case of Puerto Rico, to absorb the unemployed Hawaiians.

Jobs Decreased

The number of jobs has declined from 183,000 in January, 1953 to 178,000 at the present time. Truce time in Korea has been tough on Hawaii. The Territory's biggest employer, Uncle Sam, has let out 1,850 workers in the past year, mostly because of the end of the shooting in Korea. Another 1,000 or more have returned from jobs at military bases in the forward areas, Eniwetok, Guam and Okinawa. (One may safely predict that Hawaii may soon become Pacific Refugee Center No. 1 as the V.I.P.'s get chased out of Indo-China and other Far East areas — that is, the well-heeled fascist politicians, businessmen, and ecclesiastics.)

Increased mechanization in the sugar and pineapple plantations, mills and canneries, plus the increasing competition from mainland fruit growers and packers, has sent thousands to permanent 'retirement' without pay. Now the pineapples and pineapple juice are stacking up in the warehouses to the tune of over a million cases and some of the plantations are not going to harvest all the crop this year. Shades of the 'dirty thirties' in these days of the 'frustrated fifties'. It is estimated that the rise in unemployment has taken at least $14,000,000 out of circulation annually — and that is tough on business. In addition, construction is down $5,700,000 because of no new defense installations.

Leaders (?) Perplexed

What to do about it all? Technocrats are used to hearing the usual Price System palliatives, but it is nevertheless interesting to see the so-called 'leaders' of the community reveal their stupidity through their proffered 'solutions.' Walter F. Dillingham, Hawaii's leading industrialist, states: "What we are going to do, I don't know. But I don't want you to get the idea I am discouraged. We will solve it." The Governor of the Territory, Mr. King, is going full speed ahead on public works projects, and a revival of the old New Deal CCC (Civilian Conservation Corps) to absorb the unemployed youth is being urged by some local politicians.

Then there was the statement of a stateside investment banker, whose corporation holds some $3,000,000 in Hawaiian bonds. He seconded Mr. Dillingham by stating he "didn't have the remotest idea of how the problem would be solved," but he told the business group before whom he was speaking that they shouldn't worry because "the problem would surely be solved because it just had to be." Last of all, Jack Hall, head of the ILWU union here and one of the convicted Communists now awaiting appeal on his case, is right there with the businessmen. He states that the union is ready to assure mainland prospective investors that there will be no labor trouble. Further, that the ILWU stands ready to take wage cuts 'if it reaches the point where cuts are needed to keep the company going.' Technocracy has long pointed out that the only one dumber than a Republican is a Communist.

The colossal ignorance of the Hawaiian Price System promoters concerning the basic physical trends which are writing 'finis' across the face of the old order may be illustrated by a story in the newspapers here recently. A Hawaiian businessman just back from the mainland was complaining of the ignorance mainlanders show concerning Hawaii's geography and location. "Why," he was quoted as saying, "do you know that one man was so ignorant that he asked me whether we had finally gotten the

Mau Maus under control? H--l, I told him, how can you be so dumb? There aren't any Mau Maus in Hawaii — they are in the Philippines!"

—Malcom Dorton, R.D. 15721

Editor's Note: Defense (nice word for war preparedness) is now coming to the support of the Hawaiian economy in the form of the 25th Division returning to Schofield Barracks. Businessmen are attempting to minimize their avarice with a facade of patriotic platitudes; i.e., articles are appearing in the newspapers to the effect that the service men should be given a break and not treated like tourists.

However, the prospect of an estimated $40,000,000 per year dropping into their pockets is too much loot not to make preparations for the take. So real estate prices are on the upward bound and Price System promoters are planning to boom Hawaii as Florida was boomed in the twenties. Three big hotels are now being erected and others planned; it is also estimated that the 25th Division will need 3500 new housing units.

Technocracy has long contended that an economy based on war is the last and only prop of the Price System.

An Archaic Problem . . . 'Looking' for Work!

This June and July, 1.5 million young Americans started looking for jobs. Some just graduated from high school or college; some dropped out of school; some want to earn some money during their summer vacation.

For almost all of them, the going will be rough. An estimated 3.5 to 5 million of their older friends and relatives are out of work. Millions more are on short work-weeks.

I went to Scott High to find out exactly how it feels to be graduating in what's becoming a typical American city — one classified by the government as having critical unemployment.

Toledo, Ohio (Pop. 303,616) is an auto town. The biggest plant is Kaiser-owned Willys Motors. Last year it employed 15,000; today 7,000 are on a short week.

The Toledo Industrial Development Council figures there were 15,500 less jobs in March of this year compared to the same month last year. Local 12, United Automobile Workers-CIO, says there are 20,000 out of work. One out of 3 unskilled workers are jobless.

Now, plunked into the middle of this situation, are 2500 to 3000 June high school graduates.

It doesn't look very bright as far as job opportunities for them are concerned, according to Edward J. Bodette, manager of the Ohio State Employment Service. . . .

. . . Toledo businessmen and government officeholders have no answers. I did find a statement by Mr. Bodette to the Toledo Times. The best opportunity he could think of was caddying on the golf courses!

With 2,500 to 3,000 graduates, there'll have to be a lot of people playing golf!

The Eisenhower administration, which came in as the "champion of youth," hasn't offered any solutions either. In fact, Secretary of Labor Mitchell, in the March, 1954, "Job Guide for Young Workers," tries to pass it off. — Carl Schreyer, in New Challenge, August.

More 'Privates' and Fewer 'Generals'

Los Angeles, Aug. 11 — Thousands of potential scientists are being lost at the high school level for lack of qualified science teachers and adequate laboratory equipment, says an eminent educator serving on the summer faculty at the University of California at Los Angeles.

Dr. Francis D. Curtis, professor of education, emeritus, at the University of Michigan, states there is a pressing need for thousands more engineers, chemists, physicians, physicists, and other scientifically trained personnel.

If Dr. Curtis had his way, schools would require all pupils to take general science, general biology, and general physical science in the eighth, ninth, and tenth grades respectively. This sequence would make possible more advanced science courses in high school for those who want to prepare for scientific careers.

"In the smaller high schools especially," he points out, "our courses in physics and chemistry are of necessity watered down because pupils of all ability levels must take them."

Some of the blame for the critical shortage of high school science teachers must be assigned to the colleges, Dr. Curtis believes. In his opinion, they have concentrated too much on turning out highly trained scientific specialists and have largely ignored the need for scientific generalists qualified to enter teaching.

Editor's Note: How can we train competent personnel when the big question in the mind of the student is: which kind of training will pay the most.

Madison, Wis. (UP) — Serious employment problems will result from a "spectacular second industrial revolution" now under way in this country, a federal labor official said here Monday. Ewan Clague, commissioner of the department of labor's bureau of labor statistics, told a University of Wisconsin economics institute that older people and persons with low intelligence ratings face new problems in the near future because of new developments in electronics and automatic control of machinery.

From Candles to Grandfather's Clock . . .

Research Shows the Way

Were it not for the constant research and development in the making of timepieces, modern man would be lost in the maze of modern methodology. The know-how of watchmaking is an exact science . . . and as such is governed by scientific principles.

"Never before have I seen such an object! I feel compelled to become a pupil of our mathematicians to understand it!"

So wrote Martin Luther, and though the letter is dated April 22, 1527, his excitement fairly crackles as one rereads the words today. He had just received the gift of a watch.

A watch . . . no longer was man dependent on notched candles, sand glasses, oil lamps, water clocks, sun dials or those huge gravity driven affairs. Now that Peter Henlein, Nuremburg locksmith, had replaced the weights with a *power spring* (a ribbon of iron, key-wound to a tight coil) inside the case, time could be carried on a cord suspended from neck, waist or wrist. *Time had become portable.*

The 16th century watch had only an hour hand; today, in a laboratory at the University of California at Los Angeles, physicists use a "cosmic stopwatch" to measure the life of heavy mesons in *billionths of a second.*

Cosmic rays collide with atoms of matter in the watch, create mesons. These pass through a fluorescent fluid and the time interval between flashes is recorded on an oscillograph face whose wave crests, corresponding to numbers on a watch, are 0.000000002 second apart. Geiger counters detect the arrival of the cosmic rays, signal the device when to start "ticking."

Today a 16th century observer could puzzle, too, at the nuclear-energy powered clock being developed in England; or smile at the less-secret waker-upper designed at Telechron laboratories which sprays the sleeper with a synthetic aroma of frying bacon and eggs at a pre-set hour in the morning.

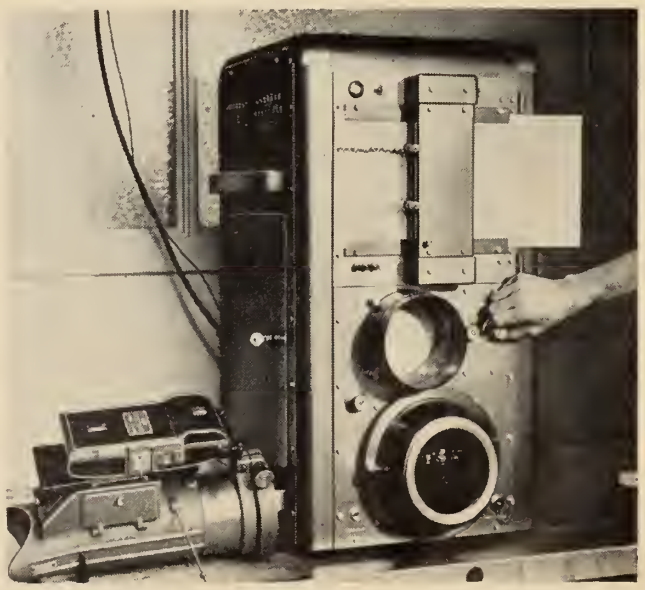
He could marvel at the sacred and the profane: the "nun's watch" made of silver (nuns may not carry gold) with cathedralesque numerals, and the "racing watch" with a quintuple 1/5-second timer for simultaneously clocking all the winners plus two also-rans.

Perhaps most astounding of all to a citizen of the 16th century would be something far less glamorous: the millions of wristwatches that pace the comings and goings of the earth's inhabitants, each watch whispering a prodigious 157,680,000 ticks a year, each 5 ticks measuring a fleeting second through minute and hour, week and month.

The 16th century watch was 6 inches across; today's "ladies' watch" movement can rest on a dime and leave margin all around; among its 119 to 193 parts are some 1/5 the thickness of a human hair; its life span, with care and yearly cleaning, is 200 years.

The modern wristwatch is the smallest, most efficient and just about the most accurate of man's machines. In fact, to understand it requires more than to be, in Luther's words, "a pupil of our mathematicians." Today's watch is the product of research in chemistry and its sister science, metallurgy. Herr Henlein's invention has come of age in the laboratory.

Basically, a wristwatch is a battle between the mainspring (which is what you tighten when you wind the watch — or what is wound by a tiny pendulum weight on slippery ball bearings when you move your wrist in the "self-winding" models) and the smaller but faster and tougher hairspring, which



This instrument analyzes the 'tick' and projects its pattern on oscilloscope screen; charts the power from mainspring, and shows rate of tick. (Photo, courtesy Fisher Scientific).

is beaten by the mainspring, then recoils and strikes back. The noise of this battle is the watch's tick.

The hairspring controls the release of power stored in the mainspring, feeding it to the balance wheel, which pulses 5 times a second, governing the wheels that move the hour, minute and second hands.

At the beginning of the 20th century, when watch researchers began their attack on the old guild methods, it was seen that time-keeping could be improved most by improving the hairspring, which originally was a hair (a hog bristle) then, for three centuries, was made of steel.

Steel springs rust, become magnetized. Above all, their elasticity varies with changes in temperature.

The first glimmer of an answer came from France in 1914 when Charles Guillaume produced a puzzling iron-nickel alloy whose elasticity seemed unaffected by temperature; he confidently named it *elinvar* (short for "*elasticite* invariable"). In America, Hamilton Watch Company metallurgists took up the alloy and tried to add more elasticity to it, pooling their resources with colleagues at International Nickel and Massachusetts Institute of Technology.

New Elements Added

They added new elements to elinvar, like beryllium, titanium. The search for the ideal recipe took years, but in 1941 the watch-makers finally got an alloy with the "spring" of steel . . . rustproof . . . non-magnetic . . . and, above all, an elasticity with a temperature-coefficient of *zero*.

. . . *Today, watch chemists have reached the point where they can achieve a certain seconds-per-day variation in the time of a watch of a certain size movement held in certain positions and in certain temperatures — entirely through chemical control of the melt!*

Another problem handed to the watch researchers was the mainspring, a part of the watch that is under so high a stress that, to quote one watch chemist, "it is always on the verge of a nervous breakdown." The traditional heat-treated high-carbon steel used for mainsprings has always been susceptible to corrosion fatigue: the slightest particle of rust would snap the tensed spring.

Battelle Memorial Institute demonstrated one answer when, in 1947, a watch metallurgist dropped a brand new wristwatch into a boiling bath of aqua regia. In a few minutes, just about all of the watch was gone, save the jewels — and the bright, hard mainspring!

This cobalt-base wristwatch alloy is now at work in everything from fountain nibs to spring washers in fire-fighting equipment.

. . . Almost 94 percent of the price of a wristwatch sold to the jeweler is labor. . . . Researchers have cut labor costs by developing an abrasive-bearing chemical solution in which watch parts are tumbled, removing burrs that formerly had to be hand-removed, and polishing the infinitesimally small watch parts. (For optimum effectiveness, however, this mechanical tumbling called for rare 8-sided jars to fit between four rods. Luckily, a chemist discovered a very plentiful source: the Barbasol shaving-cream jar!)

. . . Watch chemists have devised a process for the photoengraving of watch cases powerful enough to etch them in 15 seconds yet capable of such sensitivity that it makes possible the shaded depiction of letterheads and trademarks on the backs of watch cases. Cost is 25 percent that of hand engraving.

Chemists will be responsible, too, when high-fashion dials (the European influence is as strong on the post-war watch as on the post-war auto) are available on even the lowest-priced American watches in the near future. Luxurious "waffle" patterns and textured faces require special dies, over and above the hand work in adding gold numerals, and hand-finishing; chemists have now made the most elaborate dials in one step. All operations, including the numerals, are done through plastic molds and electro-forming baths. Recently 36 fancy watch dials were formed from one sheet of metal, coming out of the bath attached to one another like colonies of streptococci.

Theoretically the number of dials that could be made this way is limited only by the size of the bath.

Jewels were first introduced as bearing surfaces in fine watches in 1704, using natural sapphires and rubies. Today synthetic corundum, flawless where nature's own product is not, has replaced natural gems. Lubricating these bearings is an important element in a watch's accuracy and life.

So thousands of animal, vegetable and mineral oils have been tested. They had to fill a bill that demanded that they be "oily" (to eliminate friction), yet dirt-resistant (so they wouldn't clump around dirt particles inside the watch). They had to be fluid (to work well in the 50-below-zero cold of the

Equipment for testing new materials via resonant frequency gives maximum error of only .00057% in modern instruments. (Photo, courtesy Fisher Scientific).

Arctic) yet not so fluid that they would run out of the jewel oil cups in the low air pressures of the stratosphere (seeping into delicate watch parts that do not require oil) or cook out in the 150-degree-heat sometimes met in the desert. Above all, the dream oil would have to be non-oxidizing, for oxides on the wheels retard action.

These requirements were actually voiced by the military men in World War II.

. . . Now the military has handed the wristwatch scientists their toughest challenge to date: a watch that will never require servicing of any kind. Specifically, this means watch bearings that will permit the tiny moving watch parts anchored in them to rotate smoothly, freely, *without oil.*

Scores of minerals and metals were tried before the watch researchers switched to the man-made synthetics. (Carbides, though inherently slippery, proved too abrasive to the watch pivots. Indium, a little-known metal, was nice and slippery, too, but when made into bearings and tested in running watches, it proved far too soft for the job.) After encouraging results with such items as teflon, rulon, nylon, the wristwatch researchers developed a new green synthetic powder, molded it into the proper jewel-shaped forms on a new device based on the pharmaceutical pill-making machine, and sintered the "jewels" for permanent resiliency and toughness.

For a year now, experimental watches set with these bearings have been accurately ticking out the hours on the wrists of Hamilton chemists and metallurgists — without benefit of lubrication. (This project has also been taken up by the U. S. Bureau of Standards and the Navy's Bureau of Ships, who have borrowed the new substance from the watchmakers in their own search for the perfect dry bearing for larger instruments, a current government aim.)

. . . So much for future miracles — right now scientists have given the laboratory OK to an electric wristwatch and at least one watchmaker has set up production lines for the new wonder.

Despite the amazing gains in accuracy for spring-driven watches (average watch has an error of only two to three parts in 86,400!) and "running" time (the "self-winding" models store 40 hours' worth), spring-driven watches will be surpassed by the new electric timepieces in that an energy capsule will deliver power to the microscopic motor at a constant rate, not for hours, but it expires at the year's end (when the capsule can be replaced by the jeweler).

Today, research is the foundation on which the watch industry is built, whether it is the government-sponsored and centralized research of the Swiss watchmakers or the private laboratories of their American brethren. The spirit of research influences even the watch industry's personnel departments, where prospective employees may be tested with a "perspirometer" which, through electrical conductivity, reveals the acid salts of the hands. (If you're too acid, you won't be eligible to handle watch parts directly.) . . .

—The Laboratory

Time for Repudiation

(Continued from page 5)

duction of abundance. That is the one innovation to which the Old Order can't adjust. The Price System cannot carry the Old Order over this barrier, and both must be abandoned. The Old Guard is frantic and hysterical at the prospect of abandoning the impedimenta of the Old Order — human toil, politics, business enterprise, institutionalized superstition, and scarcity values. It's almost enough to make a die-hard old conservative go berserk and start banging away with atomic bombs.

Is this the time for a general repudiation of the Price System? Indeed, it is! It is far more than merely the strategic time, it is a life-or-death necessity. Technocracy has made the analysis of the social conditions on the North American Continent and has pointed out the direction that positive social change must take. This much Technocracy can continue to do; but any 'rebellion' against the inefficiency and destructiveness of the Price System must come from the sovereign people of the Continent. They must repudiate the authoritarians and administrators of the Price System and turn to science and technology for their direction and social guidance. That is to be the objective of the great social change of this generation; and it must come as a mass movement of the people — the first mass movement in the history of North America.

Rendezvous With Destiny

The stage is being set for this general repudiation to shape up. The wealth of the Continent is being concentrated into a very few hands while an ever greater number of people are being disfranchised from ownership of a proprietary stake in the System. Who among the dispossessed can afford to buy a farm, a modern dwelling, a business establishment, today? More and more of them are becoming servants and tenants of the few who have the most. They depend on the few for their jobs, for the rental of their dwellings, for the financing of their cars and furniture. But even this dependent position is not secure; for jobs and incomes frequently are terminated without warning. The great majority's stake in the System is tenuous and meager.

'Surpluses' that cannot be distributed to the needy consumers under the Price System are being withdrawn from the channels of distribution and being destroyed, let spoil, or dumped on foreign soil. Yes, it is time for repudiation; and the stage is set for it.

Since the coming mass demand of the American people for abundance (with Canadians at their side) will be the first major and general social 'experiment' of the Anglo-Saxon and closely related races, there is no precedent or prior experience for them to follow. It will happen for the first time — and it MUST succeed. Any alternative is too horrible to consider.

Technocracy, alone, is preparing the people of North America for fundamental social change. This

change is the resultant of science and technology, not the work of Technocracy as such. Technocrats merely analyze the situation, detect the trends, and point out the strategic course that must be followed in adapting to that change.

Each day that the Price System is retained — each day that the new America is delayed — witnesses the wasteful destruction of the Continent's mineral resources, and some of them are already becoming alarmingly scarce. Each day finds the Guardians of Scarcity Values more frustrated by the plague of abundance and more desperate for war. Each day forces the North American people to endure scarcity and insecurity one day longer than is necessary.

The day for repudiation is here — now — today! But misdirected repudiation may be worse than none. It is not enough merely to denounce one political party in favor of another, or denounce big business in favor of public enterprise, or decry the ecclesiastical engulfment of the North American Continent by a medieval totalitarianism. Nor is anything to be gained through anarchic individual protestation. The repudiation, to be effective, must be directed against the Price System as a whole; and it must be coordinated and unidirectional. It must be FOR something as well as against something.

If you are a citizen of North America, this is your fight. Join the march to the New America by joining the one Organization that has been in the forefront of social change for more than thirty years — then, all will know that you are earnest and positive in your stand. Technocracy can provide you with direction and a goal, but you must help provide the momentum; for, only a mass movement of the people can overwhelm the Price System and clear the way for a new order of the ages.

—Wilton Ivie, CHQ

Remember the Pigs?

Lakeland, Florida, Oct. 14 — Florida citrus growers, possibly the only agricultural producers in the nation who figure on selling 100 percent of their crop every year, missed by 1,800,000 boxes last season.

The U. S. Department of Agriculture in Orlando reported today widely varying reasons brought economic abandonment of 500,000 boxes of the state's 5,000,000-box tangerine crop and 1,300,000 boxes of grapefruit last season.

. . . On grapefruit, 300,000 boxes of seedless fruit were not picked. Low prices were the main reason for that failure.

Growers in many cases preferred to leave their fruit on the tree than sell it at less than production cost.

Editor's Note: In other words, they haven't figured out a way to give business a profit out of the deal.

'Objective' or 'Impersonal'?

Los Angeles Times — "Automation" — use of self-regulating machinery — is in the process of revolutionizing American industry, even to the extent of bringing traveling factories to the consumer.

Such visions of the future were conjured up for 250 members of the Los Angeles Sales Executives Club in the Biltmore recently by Robert T. Collins, general sales manager, New Departure Division, General Motors Corp.

The second industrial revolution, triggered by automation, is just starting but its foreseeable effects are "breath-taking," Collins declared. . . .

. . . Mechanization already has been carried out in many business and industrial lines, the bearing company executive pointed out, but it is the application of self-regulation to the mechanical process which gives automation its distinguishing characteristic.

While the most important reason for industry to get into automation is the potential cost saving through the reduction of both direct and indirect labor content in the product, there are several other appealing considerations, according to Collins.

"Automated equipment, once set up, gives uniform, high quality results," he explained. "It does not suffer from the usual human failings which cause deviations in product quality or errors in end results. It has a high rate of speed which humans are unable to match. And automated operations reduce hazards by decreasing human contact with the process.

Collins warned management to "start thinking now about obtaining the necessary specialists" and about making other necessary adjustments to the upcoming automation industrial revolution.

"More and more machine operator skills will be transferred to the machine, and operators will be relatively fewer in number," he said.

. . . Dislocation of America's labor force will take place, Collins admitted, and the vision of workerless factories and offices may very well raise the fear of mass unemployment. He called for "utterly objective thinking, uncluttered by past ideas," in solving unemployment problems.

A high, acceptable standard of living for all Americans will require a 40 percent increase in output per worker, Collins estimated, and he concluded:

"It is probable that this productivity increase will not be achieved to any large degree by longer hours, working faster or improving personal efficiency. Rather, it is new technological and marketing developments, as typified in automation, that offer the greatest hopes for achieving this goal."

Editor's note: Not only unemployment but distribution problems call for "utterly objective thinking, uncluttered by past ideas."

Automation Is Forcing . . .

A NEW AMERICA

Automation Feared

Milwaukee, Sept. 9 — Fear of progress and change were criticized here today by Lewis K. Sillcox of New York, president of the American Society of Mechanical Engineers, at the society's national fall meeting.

Mr. Sillcox denounced those who oppose freedom of inquiry. He praised "the fellow in the middle, attacked by the dogmas of all extremes but still willing, ready and anxious to fight for his own independence of thought and action and the divine right to change his mind for good cause."

Another speaker, Albert V. Blatz, packing and material handling engineer for the A. O. Smith Corporation of this city, said that mechanization of production "brings within the financial reach of all the better things of life."

He declared that top management today "is really pressing" the material-handling engineers and designers of industrial machinery and equipment for fully automatic production and material handling. "Automation is on the march," he said.

New Radar Antenna

University of Calif., Berkeley, Sept. 4 — Electronics engineers at the Berkeley campus of the University of California have developed a new radar antenna for high-speed aircraft which offers special advantages over current models. . . .

. . . There are two principal advantages offered by the new antenna:

1. It can produce a very sharp pencil beam of microwaves. This feature is necessary for special types of radar scanning and allows for picking up greater detail than is possible when broader microwave beams are used.

2. It is built flush into the plane — a necessary feature for the modern fighter planes that travel so fast that any protrusion from the surface produces aerodynamic drag.

A model of the new antenna, built by Dr. Bickmore, measures five and one-half inches in diameter and contains a series of eight ring-like slots, one inside the other, in a smooth metal surface. The beam is produced from the slots which can be filled with a non-conducting plastic so that the entire antenna becomes perfectly flush on the surface of the airplane.

The methods developed by Dr. Bickmore make it possible to get any degree of sharpness in the beam by simply varying the nature and number of the slot elements and the ways they are energized.

Electronic 'Traffic Cop'

Houston, Texas — A $250,000 "traffic cop" is making a smooth flowing operation out of sprawling Houston's down-town traffic problem.

The new "cop," an electronic brain controlling signal lights at 289 street intersections, enables traffic in downtown and adjacent areas to move over the city's system of alternating one-way streets at maximum speed consistent with safety and traffic density.

The flow of traffic itself regulates the "stop-and-go."

City Traffic Director Eugene Maier said the system is based on density of traffic. It provides progressive traffic flow (where the lights keep turning green as you reach them at speeds of 18-22 miles an hour in the central business district and 18-30 miles per hour on streets leading into the area.

When the peak periods of traffic density in the business district are reached, signals automatically change to simultaneous timing in which all cars move in one direction on a series of green lights for 70-90 seconds and then cross traffic moves in a similar manner.

The new electronic brain has detectors, or "feelers," located at strategic downtown intersections to determine the flow of traffic and relay the needs to the central "brain." The impulses automatically adjust the signal timing.

Declining Man-Hours

Chicago (AP) — An official of a heat-regulator company said today he is disturbed by "pessimists who gloomily assert" that the spread of automation in American factories and plants will "bring about slavery to mechanization and a diminishing of our creativeness."

C. L. Peterson, vice-president and general sales manager of the Brown Instruments division of Minneapolis-Honeywell Regulator Co., said automation currently "is the glamour idea in factory technology."

In an address to the National Federation of Financial Analysts Societies, Peterson defined automation to mean "the act of making a machine, a series of operations or a process automatic." He added:

"An automatic machine produced for Thompson Products in Cleveland by the Hauteau Engineering Co. in Detroit is said to produce a major jet engine part in three minutes and 20 seconds that formerly took 56 hours to make by old methods. The cost per piece dropped from $1200 to 90 cents.

Models Eliminated Electronically

University of Calif., Los Angeles, Sept. 13 — A new electronic device will make it possible to "test" the performance of jet engines, nuclear reactors, and other such structures while they are still "on the drawing board."

. . . It can simulate the thermal behavior of materials under the influence of intense and rapid temperature changes, which frequently occur in jet engines and occasionally in nuclear reactors.

Adapted to an electronic computer, the device enables the computer to predict the performance of a proposed structure from design factors and known material properties.

The new device simulates thermal behavior by exhibiting a corresponding electrical behavior under the influence of the electrical current. It makes use of readily available, inexpensive elements, called semiconductors, which possess electrical properties similar to those of transistors.

With the use of the device in the computer it will be possible to solve any problem pertaining to the thermal performance of existing or new designs. The simple principle of analogy is employed.

The new instrument is economically important in that it can eliminate building and testing of costly models of proposed engines and the like.

Photosynthetic Phosphorylation

Berkeley, Oct. 11 — New findings by University of California biologists will help science probe one of the basic mysteries of life — photosynthesis.

Photosynthesis is the chemical process by which plants convert sunlight and water into food and fuel we need for survival. Up to now students of photosynthesis have not been able to study the complete process outside the plant cell. Destruction or damage to the cell halted the process. But to understand photosynthesis completely scientists had to reproduce the reaction outside the cell.

This has now been accomplished. U. C. researchers first devised a method for extracting tiny light-converting particles from plant cells without destroying the particles' function.

Then, using radioactive carbon dioxide, they determined that the particles, called chloroplasts, were going through all phases of photosynthesis, including the synthesis of carbohydrates. This was the first time a complete photosynthetic reaction had been observed in chloroplasts outside their parent cells.

Researchers, members of the department of plant nutrition here — also discovered an energy-conversion process previously unknown to science. They found that the chloroplasts were converting light energy directly into chemical energy, without the usual intervening action of other factors. They named the new process photosynthetic phosphorylation.

Eliminating 'Short Changers'

New York, N. Y. — A new cash register that is claimed to eliminate "short changing" — of either the customer or the merchant — was announced by the National Cash Register Co. of Dayton, Ohio.

The new machine, shown at a special press preview here, automatically figures how much change a customer should receive.

In addition to protecting both the customer and the merchant, the cash register's automatic features also will speed up traffic at such spots as a supermarket checkout stand, according to John M. Wilson, sales vice-president of National Cash Register.

The machine computes how much the customer owes for his purchases and how much change he has coming. It issues a printed receipt that shows each item of the sale, the total, the amount given in payment and the change due. A printed record of these same items is retained for the merchant's bookkeeping.

It even has special buttons for figuring in refunds on bottles and coupon credits, plus any discounts or markdowns.

One of its handiest features is expected to be in check cashing, when considerable mental or written calculations are sometimes necessary to figure out the correct amount of change, Wilson pointed out.

And the cash register won't be fooled by a bill or check not sufficient to cover the amount of purchase, Wilson added. Instead of indicating how much change is due, it will automatically ring up how much more money the customer still owes.

Beta Rays 'Shot'

University of Calif., Davis, Calif., Sept. 2 — The largest spectrometer in the United States is being designed by University of California physicists at Davis as a part of the University's state-wide atomic energy research program.

The spectrometer, to measure the energy levels of Beta-rays shooting out of radioactive atoms, will be about eight feet long and two feet in diameter, according to C. Gordon Patten, chairman of the physics department at Davis.

Patten and his fellow physicists are still working out design problems of the Beta-ray spectrometer which will enable them to make precision measurements of paths of Beta-rays traveling down the tube through the magnetic field. By tracing the paths of the rays emitted from a radioactive element at one end of the tube, the physicists can calculate the energies of the rays.

Greater knowledge of the energy levels and structure of radioactive atomic nuclei will help scientists find wider uses for radioactive materials in medicine, atomic power, and scientific research in agriculture and other fields, said Patten.

The Village Smithy — 'Long-gone' Apologies to 'Longfellow'

Automobile Facts, May-June — The village smithy is long since gone, and with it the spreading chestnut tree of Longfellow's poem, but the smith is still with us. His strong right arm and, later, the crashing blows of the steam hammer, forged the sinews of a mechanized society.

First sketched by Scotsman James Nasmyth in 1839, the steam hammer was not a thing of beauty, but seemed destined to be a joy forever. Now, in new automotive forge shops, it too is being displaced — by powerful rolling machines and mechanical and hydraulic presses, integrated into closely coordinated networks by automatic materials-handling devices.

For the modern smith, the premium is no longer on a "large and sinewy arm," but on initiative and judgment. Continuous press forging of crankshafts in one of the newest shops illustrates the trend.

The idea of a continuous forging process, using presses instead of hammers, was born in the depression-ridden thirties, when, as one of the creators of the notion says, "men could sit around and dream about the things they would do when conditions picked up."

The war intervened, with the result that installation of the new system did not begin until 1949.

Nearly five years and an enormous investment were required to remodel the old forge and make the new one fully operative.

Today, magnetic cranes pluck long steel billets (not the expensive preformed shapes once required) from the storage yard to start a seven-hour journey through the forge. The billets are placed on a rack from which a hydraulic ram pushes them through a 400-degree warming furnace. A conveyor carries them next to a shear, which slices off 106-to 125-pound sections, under 13,000 pounds pressure.

The smaller pieces make shafts for six-cylinder engines; the larger ones for eights. An operator determines the size, but progress through the shears is automatic.

The next stage is a major key to the whole process — a 32-foot fully automatic rotary furnace in which billets are heated to 2,250 degrees. A turning table is "indexed" in short movements so that a space is always ready for the next conveyor-borne billet.

An elevator raises a billet to the furnace door. As the furnace table halts momentarily, a hydraulic steel "hand" lifts the billet, the furnace door opens, and the billet is inserted with a snakelike thrust and withdrawal of the hand. The door closes, the table turns as another billet is positioned, and the cycle is repeated. As many as 300 billets an hour can be processed.

Another hand removes white-hot billets and deposits them on a conveyor for transmission to the descaler, where they are cleaned by a blast of water at 1,500 to 2,000 pounds pressure. Next, powerful reducer rolls squeeze the metal into rough shape, and they are removed automatically to a 6,000-ton mechanical forging press. Biggest of its kind, it can deliver more than 35 strokes a minute.

It is here that, for the first time, human muscle comes into play. An operator grasps the billet with tongs and moves it into the first forging position. He pushes a button and a die presses the metal into a rough shape that begins to resemble a crankshaft. A quick roll through jets of water, a second strike of the press, and the piece is pushed out the rear.

A smaller press trims off the "flash," excess metal which drops into a tunnel conveyor for delivery to waiting freight cars. The same tunnel carries two sets of ducts, one carrying off fumes, the other bringing a constant supply of fresh air to operators.

Still moving by conveyor, the forgings go to an upsetter which squeezes a flange on one end. V-8 shafts then move to a twister, which gives proper alignment to the "flat" forging. A restrike press confirms this alignment.

Operators next suspend the forgings vertically from a trolley which carries them slowly through open air to the heat treating furnaces. A hardening furnace heats them to 1,550 degrees in three minutes; then they are plunged for 70 seconds into 90-degree water. Three minutes in a tempering furnace brings them to 1,125 degrees after which they take another 70-second plunge.

The shafts move on to a shot blast cabinet for final cleaning and surface toughening, in a process similar to the beating that once toughened the famous swords of Damascus. Finally comes drilling, balancing, inspection and shipment.

Each shaft has taken seven to eight hours to forge, but shafts have been coming through in a continuous flow at less than 30-second intervals. What are the gains? Results include:

Production increases of 100 to 200 percent.

Improved uniformity of quality, with fewer rejections.

A 5 to 10 percent reduction in scrap and machining losses.

Substantially lower unit manufacturing costs.

And, for workers, drastic reduction of manual handling — a perennial source of danger. . . .

. . . Though less strenuous, work in such a plant places a greater degree of personal responsibility on its workers. As the plant manager puts it:

"We now need people who can suggest improvements, not mere button-pushers. Maintenance people here are not on the job to fix things as they break. They are here to see to it that things don't break."

Planes, June 30 — Engineers in the Measurements Standards Laboratory of an aircraft engine manufacturer daily make measurements to within one-thirtieth of the thickness of a human hair. These engineers have responsibility for the accuracy of master gages, master gears and measuring rods used in engine production.

Price System Blues

(Continued from page 7)

it synthetically. Scientists hope to find a high-yielding cortisone plant whose growing cost approaches the level of the synthetic variety.

A weed grown in Arizona and New Mexico, called Canaigre is a possible source of tannin, used in tanning leather. Tannin is now imported from South America, but is becoming scarce. Canaigre may soon become a commercial crop in U. S.

Since the care of lychee-nut trees has been learned, Florida may have a new paying crop.

Pistachio nuts, used by ice cream makers and confectioners, would find a ready market, when harvesting and cultivation problems have been more fully solved.

Meanwhile, farmers must solve the problem of diverted acres as best they can.

Dairy and Poultry Surpluses

Let us see how the dairy and poultry men are faring. Naturally, they too must invest large sums in choice stock and modern housing and equipment, plus scientific feeding. Without price supports, they feel unable to realize any profit on their investments. Farm income has fallen steadily each year since 1947. It is now 30 percent below the 1947 peak.

Surplus butter, cheese, dried milk and whey, and dried eggs have been stored away by Uncle Sam, to be disposed of where and when possible. More was coming in each month than was disposed of. Dried milk and whey were sold to feed makers at reduced prices. Some factories that never processed dried milk before price propping began, produced large quantities, some selling exclusively to the Government. Over 2 billion pounds were produced last year. U. S. took 601 million pounds of it. This year's average is about 15 percent above last year.

Cheese, butter and potatoes go into school lunch and other relief programs. Some butter was sold to a firm in Seattle for 37c per pound. Recombined with dried milk, it was exported to Philippines as whole milk.

A New York firm purchased 38,600 pounds at 41c per pound for export to Peru.

One good way to dispose of surpluses is the giveaway. Millions of bushels of grain went to Bolivia, many food-stuffs to Bonn and famine-stricken areas. Britain gets surplus American meat and tobacco. The money she pays for it is returnable to Britain for defense spending.

Increasing production in importing countries plus greater competition from other exporting countries make disposal a hard problem to solve under the Price System.

When support price for dairy products was lowered from 90 to 70 percent of parity, there was, as hoped, a decided drop in output. The Department of Agriculture announced in October that it has bought no surplus butter since September 17th. Between October 1st and 17th, it bought over 3 million pounds, but was able to unload more than it took in. It was able to sell 1,593,085 pounds at prices above the support level, which was around 58c per pound, (which is still out of reach of most customers. It even sold some of its surplus stocks back to the domestic trade for the first time in many months.

City folks frequently blame the farmer for the high prices of produce they see in the market place. They are unaware that marketing costs (meaning the profit of the middle men who handle the produce after it leaves the farmer's gate) represent from 30 to 50 percent, sometimes as high as 70 percent of the price the consumer is asked to pay.

Fresh fruits and vegetables on display at the stands have price tags that spell denial to fruit-hungry people with slim purses, while in the orchards and gardens, countless bushels of luscious fruit and vegetables rot, unsold.

Acres of potatoes are left under ground because the expense of harvesting them is greater than the price the owner could realize if he dug and sold them. Potatoes are a staple food, but families have cut down drastically on their consumption of that commodity.

Effect of Income Drop

With lower prices and enforced reduction in crops, total farm income is likely to shrink even faster than last year. When farm income drops, there soon occurs a noticeable sag all along the line. Though bank profits after taxes have been increasing from 37 to 50 percent, those in lower income brackets have found it necessary to cash their savings bonds, withdraw their bank savings, terminate insurance policies or borrow money on them, to a degree far in excess of last year's record. Private and public dept are reaching astronomical figures. Our nation's 481 largest cities broke the record last year for taxing, spending, and piling up debt. Their collective debt, says Commerce Dept., was 11 billion, 3 hundred million dollars.

In the August issue of American Legion magazine, presidents and chairmen of the Boards of 19 big corporations are fairly oozing with optimism over what business is doing to promote prosperity. Not one of them promises more jobs for the unemployed.

President Colbert of Chrysler Corporation describes their program as "characteristic of the positive and aggressive response being made by industry generally to tougher competitive conditions." A quarter-million dollar loan early this year will help Chrysler "accelerate the expansion and modernization of its facilities, including further automation."

Benjamin Fairless of U. S. Steel looks for a market to the 45 million more people who in 1976 will be here to feed, clothe and house.

Melvin Baker of National Gypsum Co. says, "In thinking of the long-range outlook, there will be a much larger market than we enjoy today. This en-

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The Readers' Corner - - -

QUESTIONS FROM OUR READERS—(Editor's Note: Readers of The TECHNOCRAT are invited to submit brief questions on matters pertaining to the social problem of North America or on points of Technocracy's program which are not entirely clear to them. Questions must bear the signature and address of the writer; this is for reference only and will not be used in the magazine. The Editor reserves the right to select the questions to be used and to change the wording, if necessary, for brevity or clarity.)

Aren't individual attitudes the cause of our system's fault?

Absolutely not! Realize that it is our Price System method of operation — not individuals — that is robbing you of your share of our Continent's abundance. Here is one example of what we mean:

In the past, all of us have read about oranges being destroyed and potatoes being left in the fields to rot. Most of the farmers who have engaged in this wasteful practice are 'nice people' who realize that there are millions of fellow American citizens who could use this wasted produce to combat malnutrition. However, the rules of our Price System operation dictate that if the market is glutted it is impossible to make a profit. Because the farmer is in business to make a profit, he has to be certain that a scarcity exists, even if it requires destroying part of his crop. We do not condemn the individuals who destroy their crops, but rather the system which makes such a situation not only possible, but also necessary. Anyone else in the same position as these farmers would have to act in a similar manner or give up the habit of eating regularly; they have to keep the wolf away from their door — just as much as you or I do. Next time you read about grapefruit being dumped to rot in the fields, don't get mad at the farmers, but realize that it is the demand of the wasteful system under which we live.

Will highways make prosperity?

A recent United Press news dispatch reported President Eisenhower has proposed a 50 billion dollar highway building program to "improve atomic defenses and prepare for a population of 200,000,000 by 1970."

On the same day, local newspapers announced the letting of a contract by the Atomic Energy Commission, for a $10,000,000 atomic energy plant to be constructed in the San Fernando Valley. The contract was awarded to North American Aviation, Inc., who will operate the plant for some two years after its expected completion in 1957. Other similar plants are in the planning stage.

While these two very important news stories may appear to have little bearing on each other, they both serve as indicators of the swiftly approaching dilemma of complete technological installations, and the resultant disemployment.

The $50,000,000,000 highway program will automatically open a gigantic "WPA" project, designed to relieve some of the millions of workers who will find themselves of the "leisure class" — but without spending money — as cheap power from atomic plants operate automatic factories.

As America's population approaches that two hundred million figure, will 100,000,000 of them be on WPA? Can our economic wizards elevate the already tottering debt structure sufficiently to dole out purchasing power to buy a swiftly multiplying, atomic-powered, output? Or, like the Tower of Babel, will the whole Brobdingnagian edifice topple, to confuse the soothsayers and destroy their temple?

Technocracy knows the answer to that, and you know the answer, and I know the answer. And it is our job, as members of Technocracy and as citizens of the North American Continent, to see that more and more Americans become familiar with Technocracy's program for North America — which is the only solution to this Continent's rapidly approaching rendezvous with destiny.

Will Technocracy eliminate illiteracy?

An article in the July issue of Nation's Business states that within the past year "the army was compelled to teach 120,000 draftees enough of the three R's to put them on a mental level with kids who have completed four grades of grammar school."

If this statement seems shocking, it should. It barely touches the vast percentage of ignorant and illiterate youth in America today. One out of every ten draftees accepted by the Army is considered a "functional illiterate," and four out of ten are "marginal soldiers" with substandard mentalities. Since 1949 Army special schools have graduated 257,000 illiterates to the status of fifth graders.

Approximately one third of all draftees are considered marginal, unwanted soldiers who must be trained in special schools if they are to be useful, and about one fourth of all men of draft age are rejected because of mental or educational deficiency.

Ginzberg and Bray, prominent social scientists, define illiteracy as reflecting one of two conditions:

either the individual has had no opportunity to attend school, or he attended a poor school for a short period of time. According to the National Educational Association, one out of five of America's schools is "outmoded, unsafe or obsolete . . ." Communities are short classrooms for 8,800,000 students. Latest census figures reveal the United States today has 9,500,000 illiterate citizens.

Closer to home, San Fernando Valley's half-million residents have been rudely jolted to the realization that there are no school rooms for a large percentage of their children. More bond issues and more taxes are required to build more school facilities for more and more youngsters. And what kind of an education is our youth receiving from these limited facilities?

The prevalence of youthful hoodlums roaming the streets of all large cities, committing vandalism, personal attacks, thievery, and murder is the answer to that question.

What does it prove?

It proves that their education is insufficient. It proves that America's cities are not only short of school rooms and teachers but that the schools we do have are far lacking in direction, planning, and ability to educate our youth and give them a proper start in life.

It proves America must have Technocracy's program and Technocracy's standard of education which is in accord with the age in which we live.

What is America's greatest problem?

A stranger to America would wonder what had happened to our country and its citizens, watching the hysterical and frightened actions regarding the "Communist Bugaboo" in the land of the free and the home of the brave. A very small minority of Communists and fellow-travelers don't happen to be the issue at all, but it does help to keep the nation confused and from really understanding the true issues involved.

The problems facing America are from an antiquated system that stems from centuries of scarcity, hand tools and human toil. To many of our elder citizens, the gaslight era of 1897 was far more desirable than that of today.

Then, there were no automobiles, radios, airplanes, and television was 40 or more years away. But even then, we were beginning to move out of scarcity and into an age of abundance; and as time went on, it became more apparent that our social operations were getting so complex that a strange new condition was developing in our economic system and something should be done about it. The burning question was, "WHAT?"

Gone were the good (?) old days, and into our laps fell ever greater abundance of material things; the whir of giant machines was taking the place of hand tools and hand toil, and that progression, once established, would not reverse itself.

America today can produce an abundance for every citizen on this continent, over and above anything that has ever been known, but it cannot be distributed on the basis of the present methods of scarcity. If anything is scarce, it can bring a high price, but abundance can only be distributed without price, destroyed or sent out of the country.

The Price System is based on three premises — (1) only things relatively scarce have monetary value, which can be bought and sold; (2) an accelerated expansion of industry — the means by which profits, savings and surpluses can be plowed back into circulation as purchasing power; and (3) an accelerated expansion of debt (or credit) through the banking system, which forms the central nervous system which controls the entire financial structure, and the operation of our physical equipment.

Technocracy, as an educational organization, has analyzed our entire social system and points out that it is impossible to continue these age-old methods in the face of advancing abundance by mass production machinery and equipment. We have vast natural resources and raw materials, and have harnessed the forces of nature to convert the resources and raw materials into use forms; we have the trained personnel to operate the controls, and today nothing prevents Americans from enjoying an abundance, except blind, foolish adherence to an economic system which was designed to distribute a scarcity.

TECHNOCRACY invites all Americans to investigate the design of the New America, through its Study Classes, literature and lectures, for time is running out on an antiquated way of life. The choice must be made soon . . . why not now?

Rock Island 'Rockets'

Chicago — The Rock Island Lines may steal the show from Robert R. Young and become the first railroad to put into use a radically new, low-slung passenger train.

Rock Island has announced that ACF Industries, Inc. will start work at once on a Talgo-type streamliner which has been ordered by RI and named the Jet Rocket. . . .

. . . The Jet Rocket will consist of four cars, each being made of three articulated units. Seating capacity will be 300. The Jet Rocket will replace the road's present Peoria Rocket, RI's first streamliner, inaugurated in 1937.

The new train is expected to cut schedules by its faster acceleration and deceleration as well as its ability to take curves faster.

Each of the new train's triple-unit cars will have an overall length of 109 feet. The Jet Rocket will be half the weight per passenger of present streamlined equipment. Frames of the articulated units will be of low-alloy, high tensile steel, and the outside sheeting of stainless steel.

Price System Blues

(Continued from page 20)

larged market will be created by the demands of over 35 million children born during the past 10 years."

Dear long-range visionaries, the 35 million children are here, all right, complete with wants, lungs and crying-power. But buying-power is something else again, and that doesn't come with the package.

In spite of the bland assurances of the Big Boys, the unemployed are going to do some real thinking for themselves. When more and more automation is installed, and human labor becomes more and more of a drug on the market, then what?

No, we don't want to go back to the "good old days." In fact, that would be a physical impossibility. We accept the advances of science and technology gladly. We want to see every man, woman and child on this continent receive their share of all the goods and services so plentiful now. But within the framework of the Price System, there is no solution.

There is something Nietzsche-like about a wealthy 'public servant' who can calmly vote to double his own salary plus a fat pension, when his countrymen face hard times, unemployment, fear of the future, when national debt is reaching for the ceiling. Nietzsche's doctrine of Force, or Will to Power, elevates war, conquest, mastership. "Use the weaker race of men," he said, "as a foundation or scaffold, on which to elevate oneself to a higher existence."

There need be no storing of 'surplus' food while people hunger. There need be no slum dwellings, yet at present we have 10 million of them, and 51 percent of the dwellers therein earn less than $2000 per year — far below the calculated minimum required for decent living.

Technocracy is ready to show you how science and technology may combine to raise the standard of living for every citizen of North America, without money and without price. It will house, feed and clothe us, educate us to reach the highest standard of culture yet attained by a whole population.

No more bottlenecks, but a proper balance between production and distribution, insuring enough for all at all times, yet avoiding waste of irreplaceable resources.

The long-foreseen demise of the Price System is unavoidable, only a question of time. Its greatest exponents are doing the most to hasten its collapse.

Intelligent Americans are investigating Technocracy's distinctive design for an orderly transition into this new America, this new culture of abundance.

It will never be installed by force and violence. It can be achieved only with intelligent cooperation.

America needs Technocracy. Technocracy needs you — Now!

—Henriette Phillips

Bailer 'Bails Out'

El Centro, Calif. — Push button farming is rapidly becoming a reality in the Imperial Valley. One of the most interesting changes taking place in the area is in hay-baling operations, where a 1-man automatically-controlled baler is coming into extensive use.

The device is rapidly replacing the old 4-man and 2-man balers because of its mobility and its tremendous saving in labor costs.

The Purdy-Holmquist firm here, which handles farm equipment, estimated there are more than 60 1-man balers in the valley at the present time.

One man drives the tractor that tows the baler, and operates the baler controls all from his driver's seat. The baler consists of a pickup unit which feeds the hay into the bale chamber in a continuous operation.

After the required bale length is obtained, the hay is compressed into bales 15 inches by 19 inches, by a plunger and then is tied by two pieces of wire. After this it is pushed automatically to the ground in the field.

British Trains to Russia

Glasgow, Scotland, Sept. 17 — Peter Thorneycroft, president of the Board of Trade, British equivalent of the United States Department of Commerce, said here today that a "very substantial reduction" in the embargo and quantitative controls on goods for export to Russia and the iron curtain countries had been agreed to by Britain and the United States.

Relaxation of the ban on strategic exports meant that British manufacturers could now ship to Russia and her satellites almost all types of locomotives and railroad stock, any type of farm machinery, a wide range of machine tools, diesel engines, and industrial equipment, he said.

Subject to restrictions, the British admiralty was ready to issue licenses for the construction in Britain of a limited number of merchant ships, dredges, tugs and fishing vessels for export to Russia, said Thorneycroft.

French Rule in India Ends

New Delhi, Oct. 22 — India and France today signed an agreement transferring all French settlements in the sub-continent to India November 1, so ending 280 years of French rule in India.

On November 1 Indian police will occupy Pondicherry, Karkal, Mahe and Yanaon, taking over the last relics of the empire founded by the French East India Company in the 17th Century.

Today's agreement was a sequel to a special assembly held near Pondicherry three days ago at which representatives of the 320,000 inhabitants of French India decided to merge with the Indian union.

Wanted — Hypochondriacs

University of California, Los Angeles, Sept. 6 — There are 6,000 unemployed doctors in West Germany.

So reports Dr. William P. Longmire, professor of surgery at the University of California at Los Angeles Medical School, who has just returned from that country after a two-year leave of absence. During that time Dr. Longmire served as surgical consultant to the Surgeon, U. S. Air Force, Europe, and visiting professor of surgery at the Free University of Berlin.

He says that despite the general prosperity in West Germany unemployment among physicians' ranks is at such a high figure primarily because of the large influx of doctors from East Germany.

West German medical care is excellent, according to the U.C.L.A. surgeon, with many well-equipped hospitals.

Dr. Longmire received a certificate of commendation from the Free University of Berlin for helping to found cardiovascular surgery there.

"Although German surgery has always been of high caliber, they were not able to keep abreast of modern heart surgical techniques during the war and immediately afterward," he says. Dr. Longmire performed the first blue baby operation in Berlin in 1950 as a member of a special mission.

He says the armed forces are doing a splendid job caring for American servicemen, dependents and civilian employees throughout Europe and North Africa.

No Jobs — Period

Chicago — What the GOP hard-money policy, grease-the-businessman's palm attitude, and club-the-worker plan have done is shown in a recent article in the Chicago Daily News concerning Skid Row and the hiring done there for railroad labor gangs. . . .

. . . Seasonal jobs on railroad gangs clear out the area every summer, but this year the jobs aren't to be had — not even for money.

Reports from railroad hiring officials show that every road is down on hiring — one road reports that it usually ships about 20 or 30 men a day this time of year, but this year hasn't shipped one for three months.

Another said that men offer to pay if he'll put them on — but the jobs just aren't there.

It's tough to say "no," say the hiring officials, especially when you can see that men really want to work.

And, according to the Salvation Army officer, many of the men on Skid Row are not alcoholics — many are skilled workers, laid off by other industries, broke, unemployment compensation run out — they come to Skid Row because it promises the cheapest living costs.

Pipeline Recorder

Pittsburgh, Pa. — A "magic eye" for pipelines has been developed by Gulf Oil Corporation's research laboratories here, and is already in use on some lines. It is described as a major forward step in automation pipeline operation.

The device achieves a dream of pipeline men since their industry's birth 93 years ago. It enables them, in effect, to "look into" a pipe and tell what is passing through at any given moment.

In other words, the instrument — called a capacitance recorder — offers a continuous check of unequaled accuracy on pipeline contents. This contrasts with the widely used conventional method of mathematically calculating batch progress and verifying by sampling.

. . . The instrument functions by revealing variations in the electrical properties of the fluid as it passes between two electrodes fixed within the pipe. These changes are recorded on a clock-driven chart and appear as variations on the chart.

. . . In recent tests, five types of gasoline, a kerosene and a No. 2 fuel oil were transported with the separation point being determined by dispatcher's directive plus the checks noted above.

. . . In all, 19 product changes were made. The capacitance recorder identified these faster then any other detection methods. More important for pipeline potentialities, it was able to detect all changes — something none of the other methods could do.

An additional use seen for the recorder is the checking of meter accuracy under operating conditions, heretofore possible only with expensive extra equipment and *personnel.*

Instrument Reads Pulse

Hicksville, L. I. — Doctors will be able to get a visual reading to replace the usual manual recording of a patient's pulse during operations or other critical periods with the aid of the "Palpatron," a new electronic device just getting into production here at the plant of Gillmore, Inc.

The instrument is about the size of a minature radio and runs on its own battery. That means it can be safely taken into operating rooms where electric sparks are an explosive hazard. . . .

. . . The instrument is claimed to be so sensitive it detects beats that the doctor's or nurse's fingers can't feel. It frees an anesthetist's hands from pulse-taking during operations. Gillmore, Inc., believes instruments can be attached to all post-operative patients in a recovery room and monitored by a single nurse.

Production of the device is starting at the Gillmore plant, at a rate shortly to reach 100 a day.

Coordination for Profit

Kitimat, B. C. (CP) — A $550,000,000 aluminum industry is being built in the wild valleys of British Columbia's north coast.

. . . The whole project posed special problems. All equipment and men had to be flown or floated 400 miles from Vancouver. No one construction company on the continent was big enough to undertake the whole project. No firm had the equipment to handle the job and the Aluminum Company had to buy construction machinery for $23,000,000. It hopes to get 40-50 percent of this back on the surplus market.

. . . Workmen burrowed for three years under 7,000 foot Mount Dubose in northern British Columbia to complete the 10-mile long tunnel, through which water will rush to turn hydro generators deep underground. This power will supply the giant new Aluminum Company of Canada smelter at Kitimat—50 miles away. The tunnel, 25 feet high and 11 feet wide, dwarfs the workman. The water will come from a great artificial lake made by damming the Nechako River.

'Atoms for Asia'

New York (The Calgary Herald) (NANA) Sept. 25 — Asia's first atomic factory will soon enter into production, according to a dispatch from New Delhi to Foreign Trade, official Ottawa publication.

The factory, situated on Trombay Island, off Bombay, and destined to utilize India's immense deposits of fissionable minerals will reportedly produce thorium nitrates from monazite residues left after the extraction of rare earths at the government plant at Alwaye, in Travancore. That southern Indian province contains the world's largest known reserves of thorium. Eventually some 205 to 228 tons of thorium nitrates will be produced yearly.

The Trombay Island factory will also produce pure uranium metal from ore concentrates shipped from Bihar province.

The production of uranium metal is the last step before the turning-out of explosive plutonium or U-235. Plutonium is produced by irradiating uranium bars — an extremely long but technically simple process—then separating it from the mass of U-238.

The production of U-235 through gaseous diffusion is a relatively rapid but technically difficult process which would be beyond the capabilities of India. At present there are only two such plants in the world — at Oak Ridge, Tenn., and at Capenhurst, in England.

Editor's Note: Atomic energy and the technology for its production is no longer an American monopoly — nor can its development for power be withheld much longer.

Busy Bees

University of California, Davis — Cross pollination in cotton will be studied this summer by University of California bee specialists with an eye toward higher yields.

Many growers have long felt that honeybees increase cotton yields by cross pollinating the flowers, reports John E. Eckert, apiculturist on the Davis campus, who has been studying the problem for three years.

Tests are being carried out this year to try to find out how much yield increase is caused by cross pollination and also how many bolls a cotton plant can carry.

In the tests, blossoms will be hand pollinated, tagged, and then checked for yield and weight against naturally self-pollinated blossoms. The experiments will be run in cooperation with cotton specialists at the U.S.D.A. Cotton Field Station at Shafter and the department of botany on the University's Los Angeles campus.

Since each of the many seeds that develop in a cotton boll requires a separate pollen grain, many grains are needed to completely pollinate each flower. Self-pollinated flowers often have many unfertilized, undeveloped seeds, Eckert said.

If the tests show that cross pollinated plants show a definite increase, the number of hives per acre of cotton needed to produce the highest yield can easily be worked out.

More Surplus???

Biggs, Calif., Oct. 7 — The way fertilizer is placed in a rice field may make a difference in many dollars in the result.

In tests at the University of California Rice Experiment Station near Biggs, in Butte County, ammonia-nitrogen drilled 4 inches deep in the seedbed before flooding produced 25 percent more rice than the same amount broadcast over the field, said Duane S. Mikkelsen, assistant professor of agronomy.

He made tests with 30 pounds of actual nitrogen applied broadcast on the dry seedbed, broadcast on the flooded field, and drilled 4 inches in the dry field before flooding.

The broadcast fertilizer, he reported, produced a yield of 11 percent more than an unfertilized field; but the plot with drilled nitrogen yielded 36 percent more than a plot with none at all.

"Phosphorus fertilization has not heretofore been considered economically profitable in producing good rice yields," he said. "Current experiments indicate that with proper application methods yields can be increased. Equally important is the fact that where Phosphates influence yield, it also gives greater seeding vigor, better tillering, and slightly earlier maturity."

Jumbled Methodology

Victoria, B.C. Canada, July 27 (CP) — Frobisher Limited yesterday took the first concrete step toward converting a northern wasteland into a power supply for a multi-million dollar Canadian metallurgical industry.

The company applied to the British Columbia Government, on behalf of its subsidiary Northwest Power Industries Limited, for a water rights license to the B. C. section of the Yukon River watershed.

Application to the federal government for a license to the Yukon section was to be made at the same time.

The vast enterprise plans to harness a northern watershed extending 200 miles north and south and 300 miles east and west in north B. C. and the southern Yukon.

The enormous watershed, second only to the Great Lakes in North America, can economically develop 4,300,000 horsepower, a potential twice as great as the energy to be developed by the St. Lawrence Seaway project. . . .

. . . Planned is an expenditure of almost $270,000,000 by 1962. The eventual expenditure for the vast project has been estimated as high as $700,000,000.

The planning schedule, released yesterday, has two "pilot plants" operating in Vancouver and producing pig iron and steel and cobalt and nickel by 1956. The northern plants should be in limited production by 1957 and by 1962 close to full production.

The project will treat cobalt-nickel ores from New Caledonia, the Philippines and other Pacific islands, iron ores and concentrates to make pig iron and steel, ferro-manganese and silico-manganese from south-west Africa and eventually B. C. zinc and other base metal ores.

Editor's Note: Thus, North America's resource and power development proceeds, not as a coordinated program of Continental reconstruction, but, as a heterogeneous accumulation of business expediencies.

Federation News — At least 20,000,000 homes in this country are equipped with electrical wiring unequal to the heavy power it must carry, the National Board of Fire Underwriters says. The danger of fire is ever present, the board warns. . . .

CHANGE OF ADDRESS

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Statement required by the act of August 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233) showing the ownership, management, and circulation of

THE TECHNOCRAT, published quarterly at Los Angeles, California, for October 1, 1954.

1. The names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Managing Board, 8113 So. Vermont Ave., Los Angeles 44, Calif.; Editor, Kay Dunagan, 8113 So. Vermont Ave., Los Angeles 44, Calif.; Managing Editor, none; Business Manager, Therese E. Bertoia, 8113 So. Vermont Ave., Los Angeles 44, Calif.

2. The owner is: (if owned by a corporation, its name and address must be stated and also immediately thereunder the names and address of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member must be given.)

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3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of the total amount of bonds, mortgages, or other securities are: (if there are none, so state.) None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which the stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semi-weekly and tri-weekly newspapers only.)

Therese E. Bertoia,
Business Manager

Sworn to and subscribed before me this 13th day of October, 1954.

(Seal) Edith Nere

(My commission expires May 19, 1958)

THIS MONTH'S COVER

To find a lubricant 'oily' enough for watch bearings, yet sufficiently dirt-resistant, researchers spend months in finding the 'right oil.' (Photo, courtesy Fisher Scientific).

TECHNOCRACY

North America's Only Social Dynamic

WHAT?

Technocracy is the only North American social movement with a North American program which has become widespread on this Continent. It has no affiliation with any other organization, group or association either in America or elsewhere. The basic unit of Technocracy is the chartered Section consisting of a minimum of 50 members and running up to several hundred. It is not a commercial organization or a political party; it has no financial subsidy or endowments and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are $6.00 which are paid by the member to his local Section. Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHEN?

Technocracy originated in the winter of 1918-19 when Howard Scott formed a group of scientists, engineers, and economists that became known in 1920 as the Technical Alliance — a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934 Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundation of the present Continent-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHERE?

There are units and members of Technocracy in almost every State and in every province in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces. Members of Technocracy are glad to travel many miles to discuss Technocracy's Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHO?

Technocracy was built in America by Americans. It is composed of American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this Continent. Membership is open only to American citizens. Aliens and politicians are not eligible. (By politicians is meant those holding elective office or active office in any political party.) Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher, or housewife—so long as you are a patriotic American—you are welcome in Technocracy.

The TECHNOCRAT

Offering to the American public a medium by which it can learn the facts regarding the transition period in which we are moving toward a New America of technological abundance.

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AUTOMATION COMMANDS CHANGE

The problem of coordinating and operating the biggest array of industrial equipment on the face of the earth, and distributing its products to the population concerned is an entirely new kind of problem that the human species has never had to face before. It is unavoidably a technical problem — a problem whose solution will demand the application of science to our social order, requiring the coordination and participation of all citizens.

— SECTION STAMP —

MAR. '55

The TECHNOCRAT

PUBLICATION OF TECHNOCRACY INC. • LOS ANGELES • CALIFORNIA

IN THIS ISSUE . . .

- THE BIG ISSUE IS UPON US
- Soil and Water
- Mineral Resources
- Human Food
- Price System's 'Good Neighbor' Policy
- The Great Divide

NEWS MAGAZINE

Whole No. 173

25 CENTS

The TECHNOCRAT

MARCH, 1955

Editorial

THE CHALLENGE

"A real challenge for an engineering team is to design a system of complicated accessory equipment for aircraft still on the drawing boards, whose flight characteristics are unknown, yet whose design aims are to out perform anything produced. That was the challenge for Honeywell's autopilot design group four years ago.

"At that time various aircraft manufacturers were starting design work on supersonic combat aircraft. The need for an autopilot was obvious as the varied missions these aircraft would be required to perform demanded automatic interception, automatic pursuit, blind landing, all weather navigation, plus pilot relief.

"One can imagine the many problems that had to be resolved to produce an autopilot that would be flexible enough to 'match the mission' of the aircraft, yet provide automatic flight through the sonic barrier.

"Honeywell Aero Division successfully met this challenge and has a completely new autopilot ready. . . ."

—From advertisement in Business Week
December 11, 1954

If that is an engineering challenge, what a challenge is the technological design of all the operational equipment for an entire Continent—'from scratch,' as it were—which Technocracy is meeting!

The scientists, engineers, and technologists who are members of Technocracy, backed up by all other members of the Organization, have been engaged in drawing up the engineering specifications for the new technology (to use automation methods) as far back as 1919 . . . all in advance of the time when these blueprints can be used to build the New America.

Technocracy uses the same objective, non-political, impersonal engineering approach as the 'engineering team' referred to in the advertisement, but on a scale of magnitude covering the high-energy requirements of a Continent ten million square miles in area, with a quarter of a billion people whose living depends on the operation of installed technology, the full load capacity of which is rated at more than six billion horsepower!

Already the basic elements of the Continental Hydrology, including Continental Waterways Transportation and Continental Direct-Current Power Network, the Continental Railways, and other gigantic projects, have been outlined. Some of these designs have been described in this and other Technocracy magazines.

As Howard Scott, Chief Engineer of the early Technical Alliance and now Director-in-Chief of Technocracy Inc., has stated:

'Technology, by its march of power, is notifying every scientist, technologist, and engineer, every capable man and woman, that they are automatically members of the general staff of the New America. You are the leaders of a new civilization. Today it is a notification, tomorrow it is a command.

'Technocracy salutes the march of power and your imminent leadership!'

THIS MONTH'S COVER

The completely electronic logical and arithmetical section of the NORC is composed of vacuum tubes, resistors, condensers and crystal rectifiers arranged in circuits. Built by International Business Machines Corporation for the Bureau of Ordnance of the U. S. Navy. (Photo courtesy IBMC.)

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THE BIG ISSUE IS UPON US

So long as there are politics and politicians, there will be corruption of government and abuse of the people. It makes little difference in the main whether the political offices are hereditary, appointive, or elective. The big issue is between functional control and political manipulation.

There has been so much internal change in the United States during the past twenty years that the older people recognize that they are living in a different kind of world from the one in which they spent their youth. They have seen the greatest change ever to have occurred within one generation. And the rate of change is still accelerating. We hardly have a chance to get used to the new things that come along. Almost before we realize they are here, they are obsolescent, being replaced by newer and, often, quite different designs.

This is a frightening situation to those who seek some semblance of stability in their life patterns. The rapid change is coldly resented by many, but they are compelled by the force of circumstances to go along with it. And there are many who would like to see the advancements of science and technology officially suspended until, as they say it, our economics and politics catch up with the changes which have already taken place.

To the people of America, the change has been very 'gradual,' however, compared to what it is and will be in certain other parts of the world — most other parts. We have produced most of the changes, to date, ourselves. We have seen them come into being, then metamorphose into something else. People now living have seen ALL the stages and, therefore, have some familiarity with how the big change came about. But many people in other parts of the world will never have a chance to watch the developing stages in the social transformation that comes to their area. They will be living in an ancient, hand-tool culture one moment; then, with amazing suddenness, they will be overwhelmed with a mature, automatic, industrial complex.

Those who are overtaken by the change never will understand what has happened. Some two billion people in the world are living in areas which have been stagnating socially and technologically, dominated by a peasant-type culture, characterized by hard work, scarcity, and oppression. Suddenly, they are finding that their long-established way of life is no more.

It may be interesting for us to see how those people adapt to the change, although we may be unaware that we have not resolved the fundamental issue, yet, ourselves. The results will be different in the details in different parts of the world, at least during the transitional phases. Available resources and energy will be major determining factors with reference to how, and how fast, the change will develop. But, whatever course others may take and whatever goals they may seek, one thing we can predict with certainty: The great majority of the world's people will never achieve a culture approximating the present bourgeois pattern of the United States. There are simply not enough resources — metal, mineral, and fuel — available to support such a wasteful culture for any large part of the earth's population, nor even for us over any extended length of time.

The older peasants of the backward areas of the world may wail that they are being treated unfairly —that they should have been given more time to get used to changing conditions. Their ancestors had never adopted more than one small change in a generation; and most generations had passed without any change at all taking place. Now, to change EVERYTHING within one generation is too much of a shock to one's concepts of the way things ought to be.

But the young children of those same peasants can be taught a great deal about the new order of things — how its gadgets are made and how they operate. They can be taught science and technology or, at least, applied mechanics. Thus, in one generation, the people of a primitive culture can catch up with a lot of history that has by-passed them. The young generation, however, will be total strangers to the old. Parents and children will be living in very different kinds of cultural worlds. The superstitions and dogmas concerning nature and social ethics of the parents will be scoffed at by the children while they point with pride at their new technology and the new way of life that it brings forth. They feel that they are the creators of their destiny, not mere pawns in a whimsical game of the Fates.

This sudden change in the backward areas of the earth is not for 'sometime in the future.' It is here, now. If it has not already invaded a given area as yet, it certainly will do so very shortly. It is sweeping over Asia and Eastern Europe. It is penetrating into Africa, South America, and the moslem Middle East. While we, here, have watched the change creep upon us as a rising flood, they see it coming as a tidal wave.

There is no chance in the world that science and technology will be suspended while the traditional

hierarchies of social tyranny tighten their grips of oppression on the world's humanity. It is not a question of politics and economics 'catching up' with science; the only question is how long can these impositions upon society delay their own inevitable extinction? Politics and Business must go; it is only a matter of time.

There is much wailing and complaining in the inner circles of the Old Order to the effect that the people of this enlightened age no longer believe in the Eternal Verities nor respect the Sacred Values of the ancients — and with good cause. The people are beginning to recognize these trappings for what they really are: false fronts and tinsel lures for taking in the suckers. There are still plenty of unreclaimed dupes who let themselves be lured into the fleecing pens; but the percentage is declining as more and more people are getting 'wised up.' The Pope of Rome is correct when he blames this 'wising up' on the influences of a "materialistic' technology.

Politics Is Politics

We of this 'enlightened democracy' have acquired a sophisticated realization that the politics of the ancient monarchies consisted underneath of a monopoly control over the enslavement and looting of their respective populations; while the spectacles of valor, grandeur, and pageantry were only surface phenomena. We know THAT, now; and we deplore the terrible burdens and suffering that such useless political structures once imposed upon the people. The thing that most Americans do not realize, though, is that they have unwittingly substituted an equally useless political structure as a burden upon themselves — one which is equally intent upon fleecing them and maintaining a monopolistic control over them.

Politics, whatever its brand label, is a device for manipulating the lives and economy of the people of an area so that a few may derive enormous benefits and the great majority will pay and pay.

Among other responsibilities of government is that of maintaining internal tranquility. With any kind of ordinary efficiency, the constabulary can render effective service along this line, even with our present sloppy code of legalities. But, when politics enter into the pattern, it corrupts the constabulary like it corrupts everything else it touches. The police and detection agencies are *used* to promote certain special rackets and to suppress competition; they are also used to hound and persecute those who fail to 'cooperate.' There are plenty of little 'nuisance laws' and regulations which can be dug up to harrass those individuals and institutions who fail to show the proper enthusiasm for the political payoff. The sanitation departments, for instance, can be 'used' to bring would-be independent enterprisers into line. If the laws on the books do not cover enough territory, new laws can be enacted that will. This has gone so far in the United States at present that a person can be fined and imprisoned for believing in a rival political philosophy.

For the most part, the courts are inclined to be cooperative with the political manipulators; for, after all, judgeships are one of the choice forms of payoff for services rendered to the dominant political gangs. Thus, behind closed doors, in smoke-filled rooms, politics, racketeering, crime, and corruption are intimate buddies. Where Justice and Politics are so closely associated, as in the United States, it is no wonder that Justice appears more Inquisitional than Honorable. The senseless persecution of the American 'communists' is a case in point; although we hold no brief for Communists, as such.

The defense of the country is in the hands of those who, for the most part, have chosen a career of armed violence — too often because armed violence appeals to their characters. That is not so bad in itself so long as a society feels it must resort to war and other forms of violence to settle its disputes. However, the Military has become in large measure merely a strong-armed stooge of politics. And, since peace has a deteriorating influence on a military establishment, the Military is ever eager and anxious to do goon jobs for the politicos. The politicos, in turn, take directions from the dominant economic interests, who dote on strong armed methods of persuasion.

A military leader's importance, at least in professional circles, is rated in proportion to the number of casualties he is allowed to accept. Hence, every military leader seeks an assignment that will permit him to accept a large number of casualties. It is probably for this reason that General Matthew Ridgeway objected to the plans for American participation in the Indo-Chinese war and is now unhappy about the developing plans for waging war against Red China. These plans do not call for enough casualties among the ground troops of the Army; and Ridgeway is an Army man. Military leaders who show any pronounced compassion for the men under them seldom achieve much rank in the Armed Forces. Hence, politics and the military have much in common.

Economic Subterfuge

The number one concern of a politician in office is to enhance his own economic advantages; and the main concern of the politician out of office is to get into office so he can do likewise. If there are any exceptions, we do not know of them. Why did the people of Idaho suddenly turn sour on their beloved Senator William E. Borah shortly after his death? It turned out that this honorable gentleman, parading as a poor and honest politician, had somehow acquired and stashed away in safety deposit boxes, during his terms of office, currency valued well up in the six figures bracket. . . . Again, that highly respected and pious scholar, Dr. Elbert D. Thomas from Utah, when elected to replace the senile, very pious, and economically very successful Reed Smoot, hurriedly placed his daughter on the government payroll at a high salary — to fill a position that was, in practice, more honorary than functional. We men-

tion these men as examples, because they were high up on the list of 'good' politicians. What the general run of politicians are like, we shall leave to your imagination. In case you should need some personal incentive to stimulate your imagination, just check where your income goes.

Thus, the big issue on the Continent, insofar as it applies to the field of government, is not over which political party gets into power or remains there. It is not even a question of which political *system* is in power. So long as there are politics and politicians, there will be corruption of government and abuse of the people. It makes little difference in the main whether the political offices are hereditary, appointive, or elective. The Big Issue is between Functional Control and political manipulation.

Functional Capacity the Criterion

Within a Functional Control, the job to be done indicates the decisions to be made. and the effectiveness with which that job is done will measure the capabilities of those persons who are responsible for the decisions of government. It is somewhat like in a power plant, where the number of kilowatt-hours produced from a ton of coal is the primary measurement of efficiency; or in a manufacturing plant under the Price System, where the monetary cost of production per unit is the criterion of managerial competency. Just as there is no need for politics in the operation of a power plant, so there is no need for politics in the operation of a continent. The only way in which government can catch up with science is through the abolition of politics and the institution of a functional control. We can anticipate that the change from political government to functional control will be more profound than the change from the ox-cart to the Cadillac.

The other big field of human interest in which we take pride in pointing out the changes is the field of economics. Here, the change has been mainly in the kind, number, and complexity of goods and services available on the market. There has been no functional change in the SYSTEM of economics, at least not since the days of Babylonia, the same as there has been no fundamental change in the system of government for thousands of years.

Price System Perplexity

A few years ago, a simple problem was posed for the economics experts of the world, and none of them could answer it. The problem ran something like this: There is a merchant who has six loaves of bread for sale. He cannot use the bread himself; if he doesn't sell it, the bread will spoil. Outside his stall are six hungry people, desperately in need of that bread; but they have no money. How can those six hungry people acquire those six loaves of surplus bread? Trying to find an answer to that simple problem within the framework of the Price System is enough to give the most expert economist the heebie-jeebies.

Of course, there is no answer to that problem within the Price System. But that problem is only the symbol of the fundamental economic problem of a whole civilization. The United States has millions of tons of first grade foodstuffs in storage; and it can find no way of placing this store of food into the hands of the needy customers. To do so, they would have to abrogate the Price System, and they would rather destroy the food, dump it, let it spoil, or start a war to consume it, than alter the economic pattern. All the known subterfuges have been worked beyond any previously-acknowledged limits. Credit in the United States has been extended in excess of 600 billion dollars (net) and still no answer to the problem of purchasing power is in sight. We can conclude only one thing: The Price System experts are completely baffled by the problem of abundance within the Price System.

For the reconciliation of that dilemma, we must go beyond the Price System. Unless we can use a larger frame of reference, the specter of that anxious merchant with the six loaves of bread and the six hungry people will haunt us to our graves.

Price System merchants and their stooges will destroy millions of tons of food while hundreds of millions of people remain hungry; for, they cannot elevate their thinking and behavior above the traditions of the market place. They may be kindly, Christian gentlemen who would weep at the sight of an injured dog, or they may be calloused, conniving scoundrels without pity or mercy; it makes no difference. Faced with the problem of unsaleable surpluses, their thinking and behavior is the same. Neither piety nor cunning can find a way to get those loaves of bread into the hands of those hungry people. In both cases, the people will remain hungry and the loaves of bread will spoil. It has to happen that way under the Price System.

Solution Requires Fundamental Change

There is a solution to this economic dilemma, sure, but it has implications which no Price System economist, businessman, or politician dares to consider — even if it should be brought to his attention. To assume that any of these would think of the answer by themselves is to have blind faith in things that never happen. An effective reconciliation of that problem would mean the abolition of both merchants and customers, as such.

Under the Price System, business economics requires that the goods needed by the society be distributed by merchants; that the merchants make a profit on the transaction; and that the purchasers buy the goods with money or some recognized equivalent. Economics has always followed that pattern. Should the merchant have more goods than he can sell at a profit, or should the consumers have no money, the economic situation would be 'unhealthy.' A healthy Price System economy depends on too many vagaries, including scarcity of goods, ample purchasing power in the hands of the consumers, and

a current demand for those particular goods at, or within reach of, the places where they occur. At best, the Price System is a muddling process. It can operate effectively only within certain narrow limits.

Let us consider another simple form of economy — a family unit living isolated from all other people, as on an island or in a pioneer wilderness. The members of that family will work cooperatively to produce the food, clothing, shelter, tools, and other things they need or want. There will be no question of price, exchange, ownership rights, or unsaleable surpluses. The whole family will provide the goods for this simple economy and they will be distributed directly to the consumers.

Now, let us expand this economic pattern to a whole continent. In effect, all the citizens of the continent will be members of one large family. All will help in the work of production and distribution; and all will share as consumers of that which they have provided. There will be no price, no exchange, no ownership rights, and no unsaleable surpluses. Consider, further, that with the aid of technology, abundance can be readily produced; so, there will be no need to impose restrictions on consumption — other than safeguards against unnecessary waste. Because of the magnitude of the economy, there will have to be an organized central control and an inventory-accounting system to ensure the correct amount of production and proper distribution.

Within an economy of that pattern, there will be no such dilemma as the six loaves of bread and the six hungry people. There will be no struggle by the consumers to obtain purchasing power; there will be no competition for profits among merchants; and there will be no spoilage due to stagnation of trade.

This is the pattern of economy that is reconcilable with technological abundance. In essence, it is the pattern that Technocracy proposes for North America. Such an economy will be self-sufficient and self-contained. It will not depend for its survival or 'health' on foreign trade, or debt, or destruction of surpluses, — or on war.

Politics Replaced

The solution to the political issue of the day, then, is to advance into a higher order of social management. The present issues which appear so irreconcilable within their existing frameworks will be dispelled like fog ghosts when we move from the gloom of politics into the bright light of a functional control. When that is done, political issues that harrass us today will appear absurd, and political party rivalry will be regarded as 'kid's stuff.' Measurements will replace opinions as a basis for decisions; and accomplishment will replace bungling compromisation.

For fifty years, there has been a political squabble over the development of the St. Lawrence Seaway; and, now at last, a compromise has been reached. The compromise plan falls far short of what is needed on this Continent. If the Area was operated by a functional control, the job could be under way in a few days; and a design would be installed that would provide quick, easy, and abundant transportation from the Atlantic Ocean to the Great Lakes. There would also be a maximum development of power — at the sites which would produce the most power at the least cost rather than at sites which provide less power but special advantages to certain financial interests. The St. Lawrence Seaway would be integrated into a Continental Transportation System; also into a water control system and a Continental power grid. This cannot be achieved in a hundred years by political compromise, but it would be a routine job under a functional control.

The solution to the economic problem — of the disparity between production and distribution — likewise, can be quickly resolved through a functional control of the economic factors of the Continent. It involves liquidation of the restrictive interferences, such as those that make up standard business and financial practices under the Price System. You cannot distribute the six loaves of bread to the six hungry people so long as the merchant must make a profit on the distribution process and so long as the consumers must pay a price for the bread. It can be effected only when the bread is produced solely as food rather than primarily as a commodity, and when it is distributed without price to those who want it. This new process involves the establishment of an economic system that is functionally simple and direct in its operation — such as only the functional control of a Technocracy can provide.

Security a Necessity

Insofar as the individual is concerned, the Big Issue is one of security. Much of the fear of change is embodied in a fear of personal insecurity. In spite of the great changes which have been made in the technological field, apparently for the welfare of mankind, the individual does not feel that the social order affords him real personal and economic security for life. Much of the fanatical clinging to the old and the resentment of the developing change comes, not so much from love of the old as from uncertainty about personal survival and comfort under the new order. Price System economics and political government offer most people no assurance — only more dreadful potentialities. It is not much of a problem to 'relocate' people if they know that the new 'location' offers security, freedom from toil, and an abundance of good things. That is the kind of change which people seem most capable of making with the least resentment.

We are on the threshhold of the Big Change in the social field, the change that is demanded by the advancements in the technological field. That change can be smooth or it can be rough, depending on how long we insist on bobbling in the turbulence of the pre-transition. It is somewhat like flying a super-

SOIL and WATER

Los Angeles Herald & Express — "Dwindling resources of water, soil fertility and forest acreage" threaten the human race with extinction, a Swedish scientist warned recently at the meeting of Institute of Food Technologists in the Biltmore.

"There is an urgent need of a balance rating of our potentialities," said Dr. Georg Borgstrom of the Swedish Institute for Food Preservation Research at Goteborg.

"We cannot just go on confusing productivity with capital goods. It is most certainly no feat to empty a larder — to fill it is the achievement, which in the long run counts."

Dr. Borgstrom said world food supply is barely keeping up with population increases and soon will fall behind.

"Yet," he said, "we seem to believe that we will manage to care for two additional cities the size of New York and London each year. We are, in fact, trying to mount a rolling staircase which each hour is increasing its downward velocity."

Dr. Borgstrom called for a "complete re-evaluation" of present-day thought regarding food problems and a "gigantic coordination of research" to increase production.

"Failure to do this will mean a future characterized by an abundance of poverty," he declared.

Dr. Borgstrom pointed out that by exhausting the soil we have managed to feed the millions of the western world.

"However," he continued, "we have not managed to increase our acre yields to cope with the postwar increase of population."

Population pressure in countries like the United States, Great Britain and Sweden will soon be making its impact on food production, as it has for a long time in the Orient, he declared.

Talk by Dr. Byron T. Shaw, Administrator, Agricultural Research Service, U. S. Department of Agriculture — Fifty years ago we didn't even know whether the plains could be farmed successfully . . . Federal and State scientists were pioneering in the discoveries that have become so important to farming today. They were learning that insects can carry diseases to animals, plants, and humans. The principles of heredity discovered by Mendel were brought to light. Organized plant exploration to all parts of the world was only a few years old. Organized soil science was just an infant, although a lusty one. And the principles of systematic selection of plants for resistance to disease or weather were just beginning to be understood.

Here and there you could see a snorting steam or gasoline engine — but it looked very little like a serious competitor to the horse and mule. The word tractor as yet was not a part of our language. . . .

Step-Up in Efficiency

. . . Productivity was increasing. A farm worker in 1904 was able to produce enough food and fiber for 7 persons. But further improvements were on the way.

By 1940, one farm worker could provide for 11 people — a 57 percent gain in labor efficiency in 36 years. Today, with many more and better machines, a six-fold increase in fertilizer use, numerous tailor-made crop varieties and livestock, and new research-developed weapons to fight insects, diseases, and weeds, one farm worker produces abundantly for about 18 persons. This is a gain of 63 percent in efficiency in 14 years.

These figures not only illustrate how much things have changed, but also how fast — especially in more recent years. Since the start of World War II, we have been producing at a record rate. It's become apparent that this new high level is the rule, and not the exception. Barring some great catastrophe, either natural or man-made, it should continue.

Our economists, therefore, are now measuring our progress, not on the basis of what was normal before the war, but on what was the average production in 1947 to 1949.

The 1947-49 average was about 1/3 greater than the average for the period of 1935-39. As you know, many things have helped to bring about this new high level of production. Most significant, I believe,

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sonic plane; the worst part is building up the momentum to pierce the sound barrier. In the social field, we are at the barrier between an old era and a new era; hence, we are in the area of greatest turbulence. Once the 'barrier' is pierced, we shall be in a realm of social tranquility and stability which is inconceivable to us at this stage.

The people of this Continent are faced with the decision now; and there is only one safe decision to make — to 'pierce the barrier' into the New Era that Technocracy has described for them. Actually, there is no other decision, only annihilation in the super-turbulence of political and economic bungling that threatens us from all sides.

Prepare to live with Technocracy or to die with the Price System!

—Wilton Ivie, CHQ

were the increases in acre yields and in production per animal. These increases to a great extent resulted from improved practices and methods developed through agricultural research. . . .

. . . With the electronic microscope we can now study tiny soil fractions. We are learning some of the mysteries of the humus fraction of the soils. We are finding out, slowly but surely, what organic matter is, how it is formed, and how it functions in the life of the soil. The electronic microscope is helping us on this score. Then, too, with radioactive phosphorus and other materials, we are finding out how nutrients are absorbed and transferred to various parts of the plant.

The time is coming — and I hope soon — when farmers will be able to determine in advance the management needs and prospects for crop production of any combination of soils, crops, and climate.

That includes water. The more we increase acre yields, the more it is likely that water, not land, will become our most serious limiting factor — in humid areas as well as in dry. . . .

University of Calif., Los Angeles, Jan. 11 — The West must learn to use its water resources more efficiently if it is to meet increasing demands.

So says Martin R. Huberty, professor of irrigation and engineering on the Los Angeles campus of the University of California.

The greatest use of water in the West is for irrigation, he points out, although only two percent of the area is irrigated. Much of this water is lost through evaporation. Farmers must learn to apply irrigation water more effectively, he adds.

Industry can conserve water by re-use. A conscious effort should be made not to pollute water supply unnecessarily so it will be available for re-use.

Increasing water resources by cloud seeding or reclaiming sea water are not foreseen in the immediate future, Huberty says. However, results to date do show promise for reclaiming slightly saline waters in arid regions. . . .

The West's largest single fresh water source is the Columbia River through which 150,000,000 acre feet of fresh water are annually lost to the sea.

Donations Unwanted

Madrid, Jan. 13 (AP) — The United States has donated nearly 10,000 tons of powdered milk, butter and cheese to the Spanish poor in the last five months and Spanish milk producers say they are being ruined.

A statement published today after a meeting of the syndicate of milk, butter and cheese producers said milk sales in the Valencia region have fallen off 25 percent and the budding powdered milk industry in the Santander region is in danger of being put out of business.

(*Trying to rid ourselves of surpluses is most distressing. Secretary of Agriculture E. T. Benson's statement in his year-end report "The success of these efforts to make the best use of our bounty of food is gratifying to all of us who believe that food serves its best purpose when it moves into consumption. . ." doesn't seem to be necessarily so.*)

Even in the U.S.A.

Lawton, Oklahoma, (AP) — Fist fights broke out here today among 400 old-age pensioners and relief clients over distribution of drought emergency food rations. City and county officers struggled for forty minutes before quelling the disturbance.

Officials said the near riot resulted from misunderstandings over who was eligible for the food which is Federal surplus stocks being given by the county and state to persons made destitute by the autumn drought in this region.

It had been announced yesterday there probably were not enough eggs to go around and that they would be distributed this morning on a "first-come-first-served" basis.

Peace officers said the men and women engaged in fist fights and heaved and shoved one another around the bays of the warehouse. There were no serious injuries reported and no arrests.

About 2,000 persons in this district have been ruled eligible to receive the food.

Bees Aid in Melon Growing

U. S. Dept. of Agriculture, Washington, Dec. 3, 1954—Cutting down a honey bee's flying time can boost melon yields for the Arizona cantaloup grower, says a U. S. Department of Agriculture entomologist. . . .

. . . Edgar A. Taylor of USDA's Agricultural Research Service said today (December 7) before the Entomological Society of America, meeting in Houston, Texas, that during a recent growing season, cantaloup fields with honey bees nearby had yield increases averaging 81 crates of melons per acre.

Taylor compared the effects of honey bees on 17 commercial fields where no hives were in the visible vicinity with 20 fields where hives were within a mile—in some cases along the borders of the fields. Honey bees were active in all 37 fields during blossom time. However, the 17 fields without nearby hives produced an average of 161 crates of melons per acre, while the 20 fields with bees nearby averaged 242 crates.

Metals and . . .

MINERAL RESOURCES

Did you note the very clear warning issued recently by H.R.H., the Duke of Edinburgh? At Vancouver, he reminded Canada that she must not forget other values in the rush to develop resources; that development is only material gain and not an end in itself. He said, "Unless we think of our children and the future, the work will have been in vain and vast resources will have been squandered. We should work for a happy, secure and peaceful life for the generations to come after us." We Canadians, and indeed all North Americans, should heed this timely warning, for that it is timely, you will see presently.

The U.S.A., once fabulously rich in metals, is now mining only o*ne third* of the metals it is using! Think that one over! Their great Mesabi iron range, which in the horse and buggy days it was thought would last almost forever, has been mined out in only 75 years, so that soon most of her iron must come from Canada. She is just as short on other metals. The U. S. Secretary of the Interior reported in 1951 that the U.S.A. was using more metals *then,* than during World War II! To crown it all, and please look carefully now, the U. S. Bureau of Mines estimated in 1953, that commercial reserves of iron in Canada, the U.S.A. and Mexico combined, might last 96 years; copper, 23 years; lead, 17 years; bauxite, 8 years; zinc, 25 years; nickel, 52 years; petroleum, 12 years!!!

Future Metal Imports Undependable

What are the prospects for new discoveries of these metals? Very poor; anyone who has taken note of the reports from the whole army of prospectors for the last ten years knows that they have found very little compared to our present huge use and wastage. Cannot the U.S.A. import from other continents? Yes, they have been getting what they can, but that game is nearly over — other countries have not much of a supply of metals, and they are going nationalistic to save what metals they have left for their own use.

Probably, you have not previously given a thought to the importance of those metals in our daily lives; to the fact that 90 percent of our high standard of living is due to the use of those metals in some form. That is not all; how many people now alive would have to die if we had to return to the days of the woman-and-ox hitched to a crooked stick method of cultivation? Or even to the horse and plow? Hundreds of millions would die of starvation. Even that is not all; with the metals gone, with what are we to defend ourselves from hungry, over-populated Asia?

It should be very clear to you now that a huge conservation plan must be put into effect immediately; is that not so? But anyone who knows how our present economic system, the Price System, works, knows that it can not conserve, except in small ways and for a short period — just to fool you; it can only accelerate the use and wastage, must 'expand the market' as they say.

Technocracy Has the Design

Now you will see that North Americans are the luckiest people in the world! How very fortunate that we have Technocracy's plan all ready for this emergency! Isn't that the right name for it—emergency? If we and our children are not in peril now we never will be because who would want a looted, over-populated Continent? Trees gone, farms eroded and run down, metals gone!! It has been established that Technocracy's no price-no profit plan would conserve three-quarters of the metals now being used, yet would give us a higher standard of living than we have now.

Some people rely on bonds for their children's future. Since there is very little gold, what is the security behind about 600 billion dollars' face value of government and corporation bonds? It can only be these very metals—iron, copper, lead, zinc, nickel —for, without them, how long can our machines operate? With the metals gone and the whole population sinking to Asian levels, what value these bonds? Not worth the paper they are printed on! If you have more of them than you need for the next couple of years, the best use to make of them is to invest them in this campaign for your children's future.

Fellow citizens of middle age, this plan was offered to us twenty years ago and we turned it down! Don't you think now that we were very unwise? Now you want to know what you can do to make up to your children for your shortsightedness. And you younger citizens, don't make the mistake your parents made, because if you do, it is highly improbable that you will get an opportunity to correct your error. So, all of you could, as individuals, start now to demand conservation on the huge scale which is now necessary. The only effective action you can take is to join Technocracy. Let us act in unison—NOW!

—May House, Organizer
R.D. 17944

HUMAN FOOD

The ever present necessity faced by the restaurant owner to meet his high cost of rent, help, taxes, and the payoff in business licenses and bribes impels him to cut every corner he can to make a profit, with the result that those of his customers who depend on restaurant food for a large part of their daily diet come out shortchanged on nutrition.

It is becoming increasingly apparent that the quality of certain foods we are eating here in North America has been deteriorating in nutritative value, as the mineral content of our once rich and virgin soils becomes depleted. What is not so apparent is the further reduction in nutrition which results from the processing and cooking techniques, which tradition and business enterprise so arduously promote to their profit, and to the detriment of the nation's health.

In some ways, the early pioneers of this Continent were far healthier and sturdier than we are today. The proportion of our young men found unfit for military service in the last war proved an eye-opener to many, but the results of investigation did not prove palatable to private enterprise.

Part of this high proportion of weaklings among us may be due to the fact that modern medical science has reduced the high infant mortality rate, which formerly automatically removed many of those infants with biological weakness before they reached maturity, but that is not the entire explanation. It would not explain the great increase in dental troubles among all sorts of individuals, both the weak and the strong, nor the great increase in such diseases as lung cancer, kidney ailments, ulcers of the stomach and digestive tract, arthritis, insomnia, and even suicide.

Private industry is helping to deteriorate the health of the nation by promoting the extensive refining of the foods we eat, for reasons of private profit.

Take a good look at what they have done to bread, the 'staff of life.' Our ancestors, in their ignorance, took whole grain wheat and other seed and pounded them fine with a piece of rock, and made the resulting flour into wholesome bread using natural yeast for leavening. Milord in the castle, being ordained of God for finer things, caused his servants to sieve out the hulls and coarser particles, to be fed to the hogs, leaving a lighter, finer flour for the bread of kings. Thus, the origins of the current traditions were laid, that only white bread is fit for 'nice' people to eat.

The task of grinding grain to make flour was one of the very first of man's labors to give way to the machine age. The force of falling waters and blowing winds was used to move the stones which ground the grain. But it has been only in recent decades that ways have been found to attach sieves to the milling machines so as to automatically provide white flour with little or no added labor. Out of centuries of tradition, which made white flour seem so desirable, it began to be eaten by everyone when it was made available at a low price, rich and poor alike.

When science began to discover the existence of vitamins and the possible usefulness of roughage in the body, some popular acceptance of 'health foods' appeared. Those who cared to do so were allowed to buy some of the bran as high-priced breakfast food, and some extractives of wheat-germ as extremely high-priced vitamin pills. The rest of the bran and germ continued to be sold as livestock food. Then it was discovered that those who had made a fad of eating bran were overdoing it, and doing themselves harm thereby.

The proponents of private enterprise are always quick to point out that they are willing to supply just what the public wants, and that three varieties of bread are always available in all food stores. One can have whole-wheat, or white, or rye. The fancy label leaves the unwary with the impression that even the white bread has been 'enriched' to supply the food elements taken away in the milling process. The tremendous advertising campaigns always feature the white product, playing to the limit the existing advantage of traditional tastes.

Nutritive Elements Not Replaced

One of the prime problems in securing an adequate diet on a low budget these days is that of getting adequate protein. Our ancestors, being mostly farmers, found it easier to get meat and milk, items which loom very expensively in the modern urban budget. The wheat-germ, which is relatively rich in protein, has been removed from the bulk of the bread now sold. Milk has been made unnecessarily expensive by the artificially high prices resulting from government price-supports on butter—which is for all practical purposes never consumed, but destroyed. We do not lament the loss of the butter in the diet so much as the milk protein, which is lost in the national diet because the skim-milk left from the manufacture of the butter seldom gets back into human food channels. Only a relatively small part of the total national production of milk is consumed as human food. However, some of the skim-milk is made into powder, which is available in the

stores at fairly low prices, if you can find it and happen to know how it can be tastily and healthfully incorporated in the diet.

The brewing industry is a further instance of the destruction of large amounts of food to the great profit of the destroyers. It is not the purpose of this article to moralize on alcohol, but only to point out that all the food elements present in the final product are derived solely from the starch in the original grain, and all the other elements are sold as by-products by the brewery, mostly as cattle-food. The one exception is food-yeast, which may be bought for use as human food, supplying an excellent source of proteins of high nutritive value and B vitamins. The food scientist would be inclined to shift the emphasis in the brewing industry, regarding it more as a process of biological concentration of protein from the original grain and diverting the starch, which is usually excessive in the ordinary diet anyway, into alcoholic by-products, thus making food-yeast the primary product of the industry. It would be possible also to 'rescue' other valuable food elements from the brewer's grains which now go into cattle-food.

For those of our readers who are already acquainted with the emphasis placed on blackstrap molasses by 'health food' dieticians, the principal food-element present in this product, which is also likely to be scarce in the modern diet, is iron. It is largely a matter of individual preference of what foods one likes to eat in order to get the essential nutritional elements. Blackstrap molasses is an excellent source of iron for those who like the taste of the stuff, but it is quite possible to get the iron in other forms if one does not like the molasses.

Refined sugar can easily be over-emphasized in the diet, a fact which is certainly not advertised in any way by the promoters of private enterprise. On the contrary, enticing commercials adorn the advertising pages of magazines to 'inform' the reader that "sugar in the diet is energy in your life." It has a very pleasant taste, and very quickly dulls the appetite for other, more essential foods.

Food Preparation

The tendency in modern life is toward less and less preparation of foods in the individual home kitchen, more of it being done in restaurant and institutional kitchens, and in food factories turning out prepared and packaged foods requiring little or no further preparation in the home. Instead of grandmother's pot of oatmeal porridge, we have krunchy wunchies. The hogs get the better part of the grain. Vegetables are purchased either canned or frozen, requiring only heating before eating. Even meals are being increasingly offered in cooked or partly cooked forms. Thus, technically, healthful foods could be provided and popularized on a mass basis.

Unfortunately, the exigencies of free enterprise restaurant cooking are such as to maximize the destruction of valuable food elements. Potatoes and vegetables are thoroughly peeled, boiled in lots of water which is later thrown away, carrying with it the bulk of the mineral content of the original vegetable. Meats are carelessly cooked, destroying a large part of their food value, and then are served in infinitesimally small quantities. The ever present necessity faced by the restaurant owner to meet his high cost of rent, help, taxes, and the payoff in business licenses and bribes impels him to cut every corner he can to make a profit, with the result that those of his customers who depend on restaurant food for a large part of their daily diet come out short-changed on nutrition. Some of them may partly remedy this lack by swallowing quantities of high-priced mineral and vitamin pills which, by the way, doesn't cause any regret on the part of private enterprise.

Wornout Land

Finally, consider what 'business as usual' has done to our arable farmlands. American agriculture has always been based on a principle of mining the soil, which was once considered extensive enough to be inexhaustible. When one farm 'wore out' the farmer abandoned it and moved farther west to virgin land. That is no longer possible, as there is no more virgin land to be had. Antiquated farming methods are still being used in many cases, leading to much of the land being washed down our rivers in addition to being leached of its minerals for agricultural cash crops. The huge increase in production brought about by the introduction of power machinery has been partly promoted by government price supports rather than the alternative of land conservation methods, which would preserve the land for future generations and expanded population.

As more and more of the nation's food is grown on worn-out lands, the proportion of nutritional elements in the food we eat becomes lessened with the end results that the general health level suffers. Only by scientific overall planning can this alarming trend be reversed. When one considers that the entire chain of events from the farm to the home table affects the nutritive quality of the food, and that the influence of private enterprise in all these steps is generally detrimental rather than beneficial, it becomes obvious that private enterprise will provide no adequate solution to this problem.

Only through the installation of a complete technological integration, such as that offered by Technocracy, can all of the factors involved in the production and distribution of an abundance of good and healthful food be correlated toward the attainment of this goal. And food production is only one of the functional sequences planned by this Organization, which has likewise done research and designing on all other phases of the social problem of North America.

—J. H. Fulton, 11833-2

Price System's 'Good Neighbor' Policy

U. S. Department of Agriculture, January 26 — The sale of United States wheat and wheat products in Brazil, Bolivia, Chile, Columbia, Equador and Peru during the coming season will depend to a large extent upon price and quality and on the availability of long-time credit, according to A. M. Cummings, Grain Marketing Specialist of the United States Department of Agriculture, who has just completed a six weeks' investigation of prospects for expanding United States export outlets for such products in those countries.

. . . Mr. Cummings points out that each of the countries visited has an aggressive program for self-sufficiency in foodstuffs, and that noticeable progress in that direction is being made by some of them. However, as far as wheat is concerned, the climatic factor makes it impossible to produce grain of the quality desired. The protein content of the local wheat in those countries is reported to range between 7 and 9 percent, with a very weak gluten.

It seems quite likely, therefore, that imports of some higher protein wheat will continue to be needed to supplement the protein of locally grown crops. Even more important is the need to import wheat or flour that will strengthen the gluten so as to make it possible for bakers in those countries to produce the kind of bread to which customers are accustomed. Although strenuous efforts are being made to attain a greater measure of self-sufficiency, the increase in population and immigration will necessitate imports of a considerable quantity of food grains and their products for years to come, according to Mr. Cummings. He expresses a conviction that United States exporters can build up a very good long-time market in all South American importing countries if they are willing and able to meet the competition of other exporters on both a price and quality basis. At the present time, our competitors are underselling us in most markets. Following is summarization of Mr. Cummings' findings and recommendations.

Wheat Imports Needed

The combined production of wheat in the six countries under reference this year (1954-55) is 71 million bushels. This is 2.1 percent less than last season's estimated crop of 72.5 million bushels. Total exports of wheat and wheat flour from the United States to the same six countries during 1953-54 amounted to 4.6 million bushels in terms of wheat equivalent compared with 31.8 million bushels in 1952-53. The average for the 5-year period ending with 1952-53 exports was 25.2 million bushels.

. . . While importers of grain products in the six South American countries visited continually stressed price and quality as the main reasons for the downward trend in purchases from the United States, a number of other factors are also of importance. Included among these are increases in import duties and taxes.

. . . In most of the countries visited, the Governments have agencies which control all imports. These not only direct the buying of wheat and flour but allocate supplies to mills throughout the country in accordance with requirements in the area served by each individual mill. Virtually all prices are controlled by the Government, including the price the miller pays for the wheat, the price at which he sells the flour, and even mill feed prices. In most instances, the miller is required to turn over mill feed outturns to Government agencies for distribution to the dairy and poultry producers.

Quality Necessary

. . . Since each of the six countries is trying to build up its milling industry, the tendency has been to favor the importation of wheat over flour in the granting of import licenses. Continuation of that tendency would result in an expansion in the milling industry in all of the countries. A number of modern mills have been erected in South American countries in recent years. These have been equipped with automatic Swiss Buhler or English Simon machinery, thus making them up-to-date in modern equipment. With such equipment, they are able to produce a fine product at an economical cost. Most of the governments compel millers to grind at about an 80 percent extraction. In some countries mills are also required to mix as much as 10 percent corn flour with wheat as an extender. Most of the bread made in these six South American countries is a small hard loaf similar to but considerably larger than our hard roll. The loaves have a hard, tough crust with a coarse center. The bread is made mostly by hand labor in small, individually-owned bakeries that use from 10 to 30 sacks of flour per day. Baking is done in wood or coal fired ovens.

In Santiago, Chile, a model bakery is being set up with the most modern equipment obtainable. With the help of FAO, this bakery will show bakers how to make a better loaf of bread economically. If the project proves satisfactory, a number of model bakeries will be installed in other Chilean cities.

. . . The economy of most of the South American countries visited is based to a large extent on one crop or product. Brazil and Columbia, for example, depend mainly upon coffee for their income and Bolivia upon tin. In Equador, bananas, coffee and cacao are the main items of income. In Peru, cotton and sugar are very important in the national economy, while in Chile, nitrate and copper hold a dominant position. At the present time, most of these products are in poor demand in world markets and

prices are low. This means reduced exports and fewer dollars to buy things they need and which the United States has available for export.

. . . There seems to be very little that can be done to offset or reduce the existing impediments to expanding export outlets for United States grain and grain products in the six countries under reference. Among the things that can and must be done by United States producers and exporters, two facts are of outstanding significance. In the first place, we are sending them too much wheat of a quality that is not wanted by those importing countries.

. . . In Peru, Mr. Cummings visited docks where an importer was unloading a cargo of No. 4 Hard Winter wheat that had been sold to a flour miller at a big discount. Although the miller should have known what he was buying, he was greatly disappointed when the cargo arrived. The wheat was entirely unsatisfactory for flour making and was suitable only for livestock feed. Selling No. 4 wheat to a miller for flour production does not make friends anywhere for United States grain.

. . . In one country, the duty and tax on wheat is over $4.00 per bushel. A miller in that country said he could not afford to pay duty, tax and freight on the dirt and foreign material permitted under the U. S. grade of No. 2 Hard Winter wheat when he could buy a better product at a lower price elsewhere. Sending dirty or junk wheat to an importing country where it comes in direct competition with a clean, bright cargo, is anything but complimentary to U. S. growers and shippers.

. . . United States wheat and flour exporters can regain and keep a large share of the South American market only if (1) their products are priced in competition with other exporters; (2) they improve the quality of the wheat and limit exports to a quality product; and (3) work out some method by which they can sell wheat and flour on a long-time credit basis, or for local currency.

(*American export enterprise has been very careless about the quality of goods it sends to 'backward countries,' and the quality of things sent to South America has been notoriously low. Now, the Latin American countries do not trust American business enterprise. Between developing self-sufficiency through technological improvement and keener competition from other exporting nations, American export markets are shrinking. Between our political statesmanship and our business enterprise, we have a perfect technique for losing friends and alienating people. When we can no longer export or dump our abundance, or find space for storing it or excuses for destroying it, perhaps, we will be compelled to consume it on this Continent. That will be a sad day for Guardians of Scarcity. American export trade over the years has been a net loss to the American people. We would be ahead if we had no export business at all.*)

Synthetics

Wall Street Journal, New York — Are you fed up with lugging overshoes to the office every time rain threatens? Then what would you say to shoes that would keep your feet bone dry no matter how heavy the downpour — and still retain their natural, shiny appearance?

Or how about a set of tires that would last the life of the family jalopy?

Susceptible to poison ivy? Then how would you like a cream or lotion that would afford protection even upon physical contact with the sumac vine?

These and many other equally intriguing developments are entirely possible, even probable, as a result of research seeking new uses for the remarkable family of silicone materials. . . .

. . . Silicones — they're synthetic chemicals made by blending an inorganic mineral called silicon (an element found in sand) with organic chemicals — have been around about a dozen years. They're used in mold releases for tires and die castings, in electrical insulation, in furniture and auto polishes, and as a water repellent in synthetic fabrics, among other things.

Today, however, chemists are seeking to put silicone materials — rubber, fluids, resins, emulsions — to work in new and different places.

An outstanding characteristic of silicones is their ability to repel water and moisture. It's this trait that may make it possible to toss your overshoes on the ash heap one day soon. . . .

. . . "In fact," states Dr. Charles E. Reed, manager of G. E.'s silicone products department, "process techniques are now under study at a number of tanneries with the assistance of G. E. Technical specialists."

Speedy Band Saw

Iron River, Wis. — A metal-cutting band saw that began as an idea for a hobby is being produced in a small factory here and sold on a national basis.

Ray Tester, a machinist, got the idea for the saw last January while preparing a "do it yourself" article. The idea was pronounced good but too complicated for the average hobbyist.

Tester then checked other metal-cutting band saws and concluded that they were not as versatile as his own, so he began development and was ready to start production last summer.

The "factory" of the Tester Manufacturing Co. is a garage building and there are only two employees.

The new band saw is being used in almost every kind of industry where fast cutting of metal is required. An example of its use is in cutting the heavy, reinforced hose that carries a high pressure jet of water strong enough to blast bark off logs. . . .

. . . Tester is now developing a larger model for the pipe and plumbing trade.

The RESEARCH BULLETIN

NEWS ITEMS OF SIGNIFICANCE QUOTED FROM THE NATION'S PRESS

Who's Afraid

Los Angeles Times, Jan. 15 — The growth of automatic production techniques could lead to a revolt by workers should they be discarded as expendable victims of automation.

That was the conclusion of the executive board of the AFL United Auto Workers International Union in ending its first 1955 session at the Statler yesterday.

The board, headed by International President Earl Heaton, adopted a resolution calling for labor, management and government control of the push-button age to assure an advance, rather than a retreat, in America's standard of living.

"To oppose automation would be to oppose progress," the board's resolution said. "America cannot stand still; it must progress or go the way of every lackadaisical nation that made the mistake of resting on its laurels."

However, the resolution warned, technological advances must be "tempered" with planning for the welfare of everyone. . . .

. . . The cooperation of labor and government would be necessary to rehabilitate workers displaced by machines, the board pointed out.

"The unemployed, hungry, hopeless and destitute are easy prey to any ism that leads to bread and milk," the resolution warned.

Canadian Paradox

The Albertan, Saskatoon, (CP)—Premier T. C. Douglas Wednesday predicted a period of economic depression if Canada fails to adopt a program of social planning that will distribute growing surpluses to those who need them.

Speaking to the annual convention of the provincial CCF association, he said "We shall inevitably drift into a period of economic depression, not because we have too little but because we have too much."

This country was already beset with growing surpluses, falling farm prices and increasing unemployment. Capitalism, he said, had dealt effectively with the problems of production but had failed "miserably" to solve the problems of distribution.

(*As Price System apologists come closer to the inevitable showdown, their fear of change becomes more apparent.*)

Auto 'Boom' Over

New York Post, Atlantic City, N.J.—At least 8,000 automobile dealers are walking the brink of bankruptcy right now—and it will be a miracle if many of them survive the brutally competitive era of 1955.

That's the startling, chilling judgment of some of the nation's top automobile dealers themselves—men who have just wound up the 34th annual convention of the Pennsylvania Automotive Assn., largest association of automobile dealers in the country, here.

At the peak of the postwar automobile boom, there were about 45,000 car dealers in America.

Today, that number has shrunk to about 41,000 —already reflecting a sharp shake-out.

"Simple arithmetic should convince anyone that if we had 45,000 retail outlets in 1950 selling approximately eight million new cars and trucks at a full gross profit, we cannot continue to support the same number selling five or six million at 50 percent or less gross profit than in 1950," W. M. McCune, president of the association said publicly in his closing address.

And when I met leading members of the group for sessions behind closed doors, they spelled it out.

"I'd say conservatively that another 4,000 to 5,000 will be forced out or go out voluntarily," said a top dealer.

"Let's not kid ourselves," added his companion quickly. "Raise that number to 8,000 and you'll be closer to it."

The automobile dealers are in the greatest upheaval of their lives and they know it. They also know they face these facts:

A huge supply of new cars being pushed at them by the manufacturers who themselves are locked in the fight of the century;

A smaller demand for cars due to the fact that just since the end of World War II, we have absorbed the fabulous total of 39 million new cars and 11 million trucks;

A strongly price-conscious and discerning public (you); . . .

. . . From lushness to shake-down to survival—this is the cycle of the car dealers since World War II. When the survivors emerge from this latest phase, the business will present a far different face from the one you and I have known in recent years.

It Won't be Long Now

London, Dec. 23—It is now possible, at least in theory, to produce the best part of a motor car by sitting in front of a ludicrous panel of winking lights and pressing buttons. All you would need, in theory, is a handful of highly skilled technical egg-heads.

It is certainly practicable to feed large chunks of wire into a factory at one end and collect, at the other side, neatly packed hairpins—without anyone touching anything but a press button.

And certain malicious scientists even suggest, with a wry grin, that the electronic calculating machine could do away very smartly with the jobbers and dealers of the Stock Exchange and parcel up the whole transaction into the baffling interior of the electronic brain.

Perhaps it is better that way, since no one yet quite knows what the social implications will be. We have erected the complex society of the machine and atom age. Now we are on the brink of the automatic factory.

But few of the inventors realize what will happen—any more than the steam and machine pioneers knew what they were up to 200 years ago.

It wasn't really very long ago that Mr. Del Harder, one of the chiefs of the American Ford Motor Company, coined the gruesome, irreverent phrase—"Automation." It meant, quite simply, making machines replace men.

And the other day Mr. Walter Reuther gave examples of the press-button age in the United States: A Ford assembly line which produces as many engine blocks with 41 men as once required 117; a steel plant in which 6,500 workers produce as much as 11,000 in an older mill.

And as Mr. Reuther remarked, "These new machines won't eat potatoes and pork chops."

A frightening prospect? "No," says British Industry.

In Britain automatic production has not yet developed as it has in America—or even in Russia. But already we are catching up in such industries as oil refining, chemicals, plastics, and now steel and motor manufacture.

In the enormous Vauxhall motor plant at Luton I have seen an astonishing performance in "automation." The rough castings of gear boxes are fed into a machine at one end by man.

The machine then passes them through 16 different operations, drilling, milling, smoothing and checking, until they appear at the other end—a complete gearbox, ready for assembling. A man lifts them off the machine; the job is complete.

Before, there might have been up to 20 men, highly skilled engineers, doing the work of that machine. Now there are two semi-skilled men on the job.

One of Vauxhall's chief engineers was at my side; "The great advantage of these machines," he explained, "is that they make more cars, more cheaply, more accurately and with less human fatigue."

At the Austin Plant in Birmington, the car assembly is controlled by electronic machines operated by punched cards.

Sixteen miles of conveyor track which automatically sorts out the various types of car parts and then places them at the correct assembly point is all governed by "automation" methods. Two men do the job once done by eight.

And the same pattern of development is threading its way through the whole of the British mass production car industry.

The clerks, too, are in this revolution. For as the automatic machine tools come in one door the electronic computer enters through the other. And it is possible for one to control the other—so that an electronic "brain," fed with material, could operate vast networks of machine tools—hence the vision of the automatic factory.

The computer is not yet doing that in Britain—largely because it is a costly process and it is still cheaper to use human labor. Indeed, some of the back-room boys say that it will be a long time before British industry finds it economically worth while to switch over to these grandiose schemes of push-button production.

But Leo, the electronic calculating machine of the J. Lyons Company, is capable of displacing between 200 and 400 clerks.

Any displacements at Lyons have been found other jobs within the company and now Lyons have started manufacturing more Leos for other firms. They cost $252,000 and take 15 months to build.

In the meantime, the Clerical Workers' Union has begun pondering the outcome of all this. Assistant general secretary, Mr. Henry Chapman, however, admits: "The union recognizes that it cannot oppose this sort of thing; it would be illogical, since it is bound to improve rather than lower living standards."

The age of "automation" will bring many problems. . . . It should mean higher standards of living: cheaper and better quality goods; and possibly the four-day week.

But it will mean a recasting of our whole attitude toward industrial production . . . and how we spend our leisure. It will probably mean more workers with higher technical skills and fewer unskilled and semi-skilled men.

For the new machines of the atomic age will have to be maintained as well as made by top-skilled technologists. It may mean reorganizing our education system. It may mean changing the technique of building factories. . . .

But there is one problem the industrialists have not yet solved—is it all worth while? For America, with her immense volume of production, whether of pots and pans or motor cars, the automatic factory pays off.

But would it be worth while, even if practicable, in Britain? Or would it be cheaper the way we do it now?

The answer probably is that we have no choice; the force of events will push us further and further into the push-button age.

Atom Powered Planes

Wall Street Journal, Oct. 6 — Man's dream of unlimited flight, free from the need of frequent landings to refuel, has moved appreciably nearer reality. The atomic plane can now be built, and the construction task may soon be seriously tackled.

Within the past year engineer-scientists have quietly evolved designs which they are certain have licked the most difficult single obstacle to nuclear-powered aviation: the gargantual weight once deemed necessary for atomic planes.

The men who have figured out the weight-cutting techniques include members of at least one highly-regarded technical advisory group and, reportedly, experts within the Atomic Energy Commission itself. These engineers have at the same time made a big dent in what has been another puzzling problem: How to translate the atomic reactor's heat into jet propulsion.

If the promise of these new designs is fulfilled it will mean that military picket planes could stand guard in the skies over the Atlantic and Pacific for many days without landing, bombers could girdle the earth, and anti-submarine planes could outstay the submarines in their deadly game of hide and seek. Commercial atomic-powered airliners could hop from New York to Tokyo, Calcutta or Melbourne, non-stop. Cargo could be carried in huge air freighters at lower rates, opening new markets. It's planes such as these rather than fighters or guided missles that would comprise the first generations of nuclear aircraft. . . .

. . . Some engineers remain skeptical of the imminence of the atomic plane and its power plant, and say it will be 15 years before a practical solution comes along, but the atomic enthusiasts cite the wide divergence in estimates of practicability and timing which have accompanied every atomic advance, including the hydrogen bomb. The optimists have usually been right.

In this instance, they believe the time is ripe for somebody to put up the money for final design and construction of an atomic plane, complete with full-size reactor and shielding. It would take a pile of money, like the development of any radical new plane, and it seems unanimously agreed that the "somebody" would have to be the government.

Automatic Pilot

University of California, Berkeley — A new type of automatic pilot that is expected to work faster, allow for more stable flight, and cost less than conventional models may result from work done by engineers at the Berkeley campus of the University of California.

Dr. Otto J. M. Smith, associate professor of electrical engineering, and Laurence Silva, an engineering graduate student, have built a model of part of the mechanism for the new automatic pitch control.

They hope that the four-inch by two-inch by four-inch unit will be tried on an airship sometime soon.

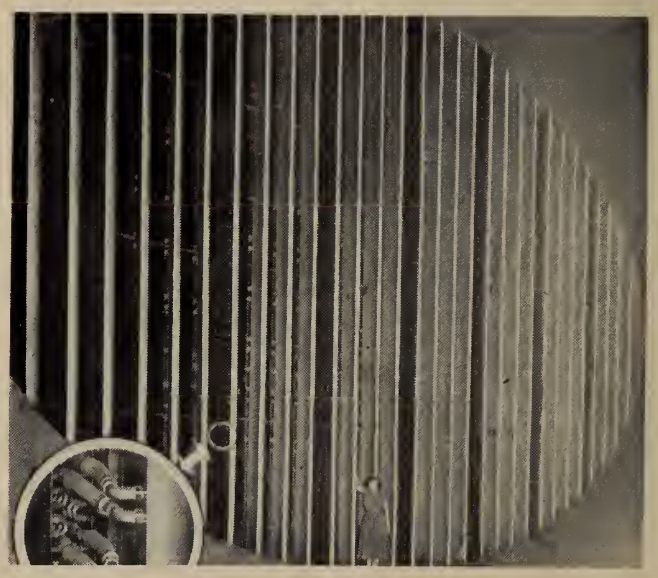
"All automatic pilots," said Dr. Smith, "are classed as the 'servomechanism' type of feedback system." Feedback systems operate simply by receiving orders to perform a certain job, starting the operation, and then receiving additional instructions how to carry on by the way in which each element of the task is performed. An ordinary home thermostat, for example, is a "regulator" that operates on the feedback principle where no premium is placed on the speed of the operation.

Speed is important in the servomechanism type of feedback system, however, and the new automatic pilot supplies plenty. Here is how the pitch control works.

The automatic pilot is set so that the airship will climb at a specific angle until it reaches a certain altitude. Planes controlled with ordinary automatic pilots tend to overshoot the desired angle of climb, first in one direction, then in the other, wobbling until the plane's course becomes stable.

The new type of automatic pilot, however, is expected to react faster and to keep the plane climbing at a constant angle, thus eliminating the wobble. Dr. Smith said that a "predictor-control circuit" is the element in the new pitch control that does the job faster and more effectively.

Planes — In World War I, it took fighter planes an hour to climb to 6,000 feet. Today, Navy carrier-based fighters can reach altitudes greater than 10,000 feet in less than two minutes.



Chilling fast-as-sound air is accomplished by this giant wind tunnel radiator installed in California aircraft plant here. Compare size with woman shown standing. Inset shows connections for cooling. (Photo courtesy American Brass.)

Electronic Weatherman

Washington, Wall St. Journal — U. S. scientists think they have the answer to the age-old enigma of weather predicting. It's a gifted contraption with the impressive name of IBM 701 Electronic Data Processing Machine. Known familiarly as "Seven-Oh-One," this machine is capable of absorbing huge quantities of atmospheric information, solving complex mathematical equations—and even drawing maps. It's expected to show up here in a few weeks, and start producing fragmentary forecasts by midsummer.

. . . Weather Bureau officials figure forecasting now is accurate enough for most purposes, though they note errors are not infrequent. But the new electronic technique will enable the weathermen to take into account many more atmospheric clues, apply them to tremendously elaborate equations, and come up in a matter of minutes with "answers" that would take an army of highly-trained mathematicians days to duplicate. The result: much greater accuracy, and more detail in the weather forecasting of the future. . . .

. . . The big "brain" does more than speed up current predicting: It permits use of a quite different approach to weather forecasting. Under the present scheme, thousands of observers across the nation make on-the-spot reports on weather conditions. This information is plotted on a map. Forecasters then try to draw another chart showing how things will look 24 hours or more ahead. Basically, they rely on past experience to do this predicting, coupled with some relatively simple scientific calculations.

The new electronic technique relies entirely on basic laws of physics and aerodynamics. Using these laws, the scientists work out elaborate equations, based on all sorts of weather factors. Actually the theories behind these equations have been familiar to meteorologists since long before the turn of the century: the catch has been that the human mind has been unable to work out all the necessary computations fast enough to produce timely forecasts. One scientist reckons it would take 60,000 men working night and day to keep up with the weather by paper-and-pencil arithmetic using the "scientific" approach. . . .

Control console of the NORC. Switches start and stop machine and modify the written program. In normal operation, however, the calculator proceeds automatically according to instructions, recorded on magnetic tape, without control by the operator. (Photo courtesy IBMC.)

Photo shows NORC's logical and arithmetical unit, console (denter), magnetic tape units and printer (left, rear), indicator panel (rear) and printer (left, foreground). Photo courtesy IBMC.)

Electronic Cashier

New York, Wall St. Journal, Dec. 29, 1954—Department store clerks may soon be preparing data for complicated electronic "brains" while they ring up sales on their cash registers.

A new electronic system announced by National Cash Register Co. has transformed the relatively simple cash register into a machine that feeds information to computers. Using the new set-up, it's explained, the keys a clerk hits on his cash register will not only record sales in the usual way, but will also produce a punched paper tape that, later on, can be placed into electronic computers and other machines for more processing.

Ordinarily, the tape fed into such electronic "brains" has to be punched out in a separate operation. Doing the job at the same time sales are rung up on a cash register will cut a department store's costs and paper work considerably, National Cash Register believes. It says data from the cash register—the size, color, price, etc., of the item sold—later processed by a computer could simplify a store's inventory keeping, as well as a host of other problems.

Office workers who use accounting machines and adding machines will also be able to punch out the

tape for later processing at the same time as they do their regular work, a company spokesman reports. He says deliveries on equipment to make the feat possible are scheduled to start in 1956. (*All ready for Technocracy's Energy Certificate.*)

Price System Worries . . .

Los Angeles Examiner, Dec. 5, 1954—A report issued by the CIO United Auto Workers Union said that automation, "if irresponsibly introduced and exploited, will bring unemployment and misery instead of security and abundance."

American industry may be fully automated within 10 years, which would mean that one man would do at least the work now done by five, UAW leaders said.

Examples of increased productivity cited in the report showed:

Ford Motor Company's automatic engine plant turns out twice as many engines as an old-style plant with one-tenth the man-power.

A radio assembly line geared to produce 1000 radios a day with only two workers needed to run the line, is replacing standard hand assembly which requires a labor force of 200.

The average refinery which would employ 800 people without instrumentation would employ 12 people were instrumentation utilized to the fullest extent possible.

The key to success in the struggle against the machine, the UAW report said, is "increased purchasing power in the hands of the people.

"We must be able to purchase the goods we produce. And, when our productive power increases, our buying power must also increase.

"The UAW will make its contribution by insisting at the bargaining table that purchasing power be increased sufficiently to match our productive capacity."

But the report warned that high hourly rates of pay are not enough, that a guaranteed annual wage "becomes imperative for workers in the face of these new and revolutionary technological changes."

"The wealth producing potential of automation is matched only by its potential for disruption and chaos unless harnessed in the interest of the nation, as a whole," the report continued. . . .

Electronics and the Sun

Cedar Rapids, Iowa (AP) — Radio waves from the sun can now be harnessed by an electronic instrument to do all-weather navigation work for ships and planes, Arthur Collins, president of the Collins Radio Company of Cedar Rapids, disclosed yesterday.

The instrument is the first radio sextant, an electronic successor to the hand-held sextant used for centuries by marine navigators. But where its predecessor required a clear sky to obtain "position fixes," the radio sextant relies only on the sun's radio waves which penetrate rain, snow and cloud cover.

Developed for the U. S. Navy Bureau of Ships, the radio sextant has undergone tests on a naval vessel. The U. S. Air Force also has sponsored an airborne version of the sextant.

The projects have been under security wraps for several years.

War — Unthinkable

Saskatoon Star-Phoenix, Dec. 20, 1954, Paris (CP)—Behind the congenial agreements reached at the Atlantic council meetings lurks the uncongenial thought that the push-button era is getting ready to move out of the science fiction strips.

Within the next decade, development of new weapons and techniques authorized by the 14 NATO governments may see conventional fighter squadrons replaced by pilotless planes, and infantry divisions as now known superseded by small mobile groups.

Although officials stress that the new NATO planning pattern is "evolutionary rather than revolutionary," it is obvious that guided missiles, rockets with atomic warheads, intercontinental bombers and megaton bombs are going to make a tremendous difference in the defence setup.

In visualizing the shape of possible wars to come, planners are sure to place great emphasis on "early warning" systems. This is particularly true in the case of an air attack on North America.

The power to create destruction is so unthinkably great that any potential foe of the West will probably be wary of starting anything without first making sure the intended victim's capacity to retaliate has been neutralized.

"It will place a fantastic premium on intelligence," said one conference source. "We'll have to know what the other fellow is up to."

A great issue will be how to find a place of safety for the American retaliatory system.

An example of havoc-wreaking weapons in the offing is the megaton bomb now being produced in quantity. The relation of the megaton to the atomic bomb has been described as that of a machine-gun to an old muzzle-loader.

The picture is not wholly gloomy, however. Some Western observers feel that the capacity for inflicting a catastrophe is so great that ambitious powers will be careful about precipitating such an onslaught. Man's weapons are becoming so fearful he may decide it is time to give up war.

(*When the youth of the nation did the dirty work—i.e., crawling in mud, bleeding and dying—it was easy for those who made the money and reveled in public hero worship to decide to wage a war. But now, when anyone may have to participate in the dying—war looks different.*)

Political Americana

No one is forgotten more quickly in American politics than an unsuccessful candidate for Vice-President, and few of those who succeed can be remembered. What American knows who Levi Morton was, or Hobart Marshall and Curtis? Yet all served within living memory, with only one missed heart-beat between them and the tenancy of the White House. This fate, at least, is not courted by Richard Milhous Nixon, the man who has turned a sinecure into a responsible post with excellent prospects. None of his predecessors has risen so high so fast, nor have they served a President who is so willing to share his burden with a professional politician, so thankful that the mate can, and often does, steer the ship. For Nixon is not left to preside somnolently over the Senate, nor to wander around Washington looking for something to do; he is an ex-officio member of the Cabinet; he serves on the National Security Council, which has superseded the Cabinet in many high policy decisions; and he handles the delicate relations between the White House and the leaders of Congress. Whether or not President Eisenhower is consciously grooming him for succession, Nixon is the first Vice-President who by training and experience would be competent to take over if, as happened one day in 1945 to Mr. Truman, "the heavens fell on him." Already, as a member of the White House staff said recently, "for all practical purposes he's running the Government here in Washington."

Synthetic Hero

Richard Nixon's career has been like the course of a lucky player at Snakes and Ladders. At each crucial moment, he has thrown the right number. And though it has sometimes seemed that luck has been helped by loaded dice, in forty-two years he has written himself a biography that is almost too perfect. When he was seven, his grandmother, Almira Milhous, gave him a portrait of Lincoln inscribed with the verse:

> Lives of great men all remind us
> We can make our lives sublime,
> And, departing, leave behind us
> Footprints in the sands of time.

This text may still have been hanging above his bed when, as a student at Whittier College, he listened to his history teacher, Professor Smith, insisting that events were shaped by great men, not by social forces — a theme to which Nixon returned several times in praising Eisenhower in the 1952 campaign.

Nixon himself is not the stuff from which great men are made. He lacks principle and imagination. But he has all the elements needed for success in modern America. Eisenhower thinks that the Nixons, with their two small daughters, are "the representative American family." They look right and they act right. Nixon might be mistaken for a car or insurance salesman, or perhaps an account executive in an advertising agency. Though he is a Quaker, he chose to enlist and had a good war record in the Navy. Before that he had worked his way through college by working part-time in the family grocery and gas-station in Whittier, California. A good academic record and five years as a practicing attorney showed that he had ability, and gave him experience that was to be immensely useful when he came to serve, in his first months in Congress, on the Un-American Activities Committee. He has personal charm, of the synthetic kind that appeals to a public conditioned by Hollywood and TV heroes; he works hard; and he does not conceal his ambition. No "Mr. Republican" — Nixon is not a diehard like Bob Taft — he is "Mr. Smoothie," the All-American Boy.

Politics Compromises

These talents stood Nixon in good stead at the greatest crisis in his career, when in the 1952 campaign he had to face the charge that he had been receiving money from a secret fund raised by a group of wealthy Californians called Volunteers for Good Government. Eisenhower was furious at the disclosure — especially since he had hand-picked Nixon at Chicago as his running-mate and as they both were denouncing the corruption of the Truman Administration. There was talk that Nixon would be dropped from the ticket as he went on the radio and television circuits to defend himself. He rose to the occasion. As his wife sat beside him before the cameras, he defended himself as an honest man who had taken the money for such essential purposes as sending Christmas cards to his supporters—$4,237 in two years—or traveling expenses, instead of throwing the burden on the taxpayers. He lashed out at "the Communists and crooks" who were trying to smear him, accused Adlai Stevenson of having a similar secret fund, and laid bare what appeared to be an exact account of his whole financial history. He mixed self-pity, sentiment and confident denunciation of his opponents, using every cliche in the politician's handbook, and imitated Roosevelt ("they now attack my little dog, Fala") by stoutly defending the right of his children to keep a cocker spaniel which, oddly enough, was called Checks, sent as a gift by a supporter.

Though Nixon turned the secret fund to his own advantage, the source of the $18,000 collected in two years showed what kind of people backed him. The largest contributors were real-estate operators

(he voted against public housing and rent controls), oil interests (he had voted to take control of tidelands oil away from the Federal Government), and wealthy men who liked his support for tax reductions and "free enterprise." Such groups had backed Nixon from the beginning, ever since he was first chosen in 1946 to run in California's 12th District against Congressman Jerry Voorhis. Nixon was the new kind of candidate that the Republicans needed: ambitious, amenable to business support, but not tarred by obvious association with the oil, fruit and real-estate interests, and willing to attack militant liberals with all the weapons in the anti-Communist arsenal. Voorhis was a Left-wing Democrat, but so anti-Communist that the California C.I.O., then Communist-dominated, refused to endorse him. This did not stop Nixon from smearing him; the slogan was "A vote for Nixon is a vote against the P.A.C. (Political Action Committee of the C.I.O.) and its Communist principles." The same formula was used four years later, only much more viciously, when Nixon ran for the Senate against Helen Gahagan Douglas, another progressive Democrat. Receiving substantial sums from the China Lobby and Californian business, Nixon won after one of the most unpleasant and unscrupulous campaigns of the year.

Nixon — 'Mr. Politics'

By this time, Nixon had made his name. He was the man who, in the eyes of America, had exposed Alger Hiss. As he looks back, he must rank that achievement with his television performance in 1952 as a turning point of his career. He had quickly made his mark as a junior member of the Un-American Activities Committee. He had attacked the Truman Administration for laxity in the Eisler case and the espionage hearings; he had helped in the sensational inquiry into Hollywood Communism. Now, uncertain at first whether or not Whittaker Chambers was lying, and feeling like his Committee colleagues that nothing could be gained by any further questioning of Hiss, he suddenly found in Chambers' testimony a "detail that gave me a flash of absolute conviction." Chambers had said that Hiss had once seen a rare bird, a Prothonotary Warbler, by the Chesapeake and Ohio Canal. When Hiss was asked —and he had no knowledge of what Chambers had said—if he had ever seen such a bird, he answered that he had, "by the C. & O. Canal." From that moment Nixon pursued Hiss relentlessly. Through much of the dramatic hearings it was Nixon who made all the running, right up to the dramatic moment, about six o'clock on the evening of August 17, 1948, when in a room of the Hotel Commodore in New York, Nixon confronted Hiss with Whittaker Chambers. Nixon had gotten his quarry, and the game was something bigger and more sensational than ever McCarthy has brought down with his clumsy blunderbuss. The suave young lawyer, the slick operator, had shown that "white-collar McCarthyism" was a better recipe for success than cruder demagogy.

When Nixon was picked to run with Eisenhower, he still managed to keep up a respectable appearance, though the content of his campaign speeches was almost as crude as McCarthy's. He attacked "Communists" and "crooks" in Washington, the seven years of Truman-Acheson rule which "lost six hundred million people to the Communists," let spies, perverts and security risks run free in government, and saddled the American people with "creeping socialism." By contrast, Eisenhower would get American boys out of Korea — "The Democrats' War"—and build prosperity on peace and honest government. With only slight variations, Nixon used the same themes when he took the stump for the Republicans last autumn.

He has played his cards cleverly. Though he has never become identified with the Republican diehards, he has avoided too close an identification with the party "liberals": he skillfully manages to look "progressive" and to behave as the tool of the most reactionary elements in U.S. business. He is "safe" on labour law, social security, public housing, taxes, oil, Communism, controls, and Chiang Kai-shek. He has been named as one of the leaders of the "preventive war" faction in the Administration. As a "trouble-shooter"—an ultra-Right Harry Hopkins—he has been used to do the hand-shaking, the smiling, the smearing and the intriguing which the Administration needs and the President will not do.

—New Statesman and Nation, London

Canadian Inquisition

Have you ever thought that one day the finger of political suspicion may be pointed at you and that you may lose your job? Or are you one of those who march dimly on in the night of your ignorance, believing such things don't happen here? If you are, hearken to the hitherto unpublished story of Colonel X.

An engineer, Colonel X came to Canada from Britain, and found work with a large firm in Montreal engaged on defense contracts. His employment frequently took him to Ottawa, where he consulted with the Department of Defense Production.

One day, X's boss got a note from the "Director of Industrial Security." It informed him his engineer was a "security risk" and would in future not be received by government departments.

The manager of the firm told X about this (which he was not supposed to do). To use his own words, the suspect "then did the only thing a gentleman could do." He resigned his job. He felt he couldn't carry on when his colleagues might justifiably regard him as a traitor to the country which had received him.

Meanwhile, the word (inevitably) got around in Montreal that X was a persona non grata with the security people, and he found it impossible to obtain work. This went on for several months. He then wrote to a friend in Calgary about the matter. This

friend visited X's former employers and was actually shown the Ottawa note. It inspired him to write to the Director of Industrial Security, pointing out X's background.

This was that, to the Calgary man's personal knowledge, the object of Ottawa's suspicion had been with the British War Office during the second Great War, dealing with all kinds of secret weapons "from drawing board to assembly line": he had passed all security getting by military intelligence; had been responsible for allocating the engineering equipment to be used by the British and Canadian units taking part in the Normandy assault; was necessarily "in the know" regarding the order of battle of those units and the date they were to go into action; and after the war had been entrusted with probing Germany's top industrial secrets and passing them back to Britain. Never had the breath of suspicion huffed his way.

To this came the short reply (marked secret) that after "earnest and conscientious review" the Director of Industrial Security found it impossible to change his decision. The Calgarian was forced to reflect that Ottawa might indeed have something on X. After all, the most unlikely people *can* become security risks.

He nevertheless determined to have one more tilt at the mill. X had been born in Russia and had a Russian name (but had been in Britain long enough to serve also in the First Great War). It was possible he was regarded as a security risk because he might have relatives behind the Iron Curtain. If this was the case, said the local man in a second letter to Ottawa, could X be informed of this? He would then readily understand why Ottawa must be cautious. This request was ignored, but the seeker of fair play was informed in a second letter marked 'secret' that he was not to tell X there was to be no change in the official attitude toward him.

More agonizing months passed, during which time the suspect, "a proud little man," was as one possessed. He might easily have put a bullet through his head. Seeing this, the Calgarian persuaded X to write personally to the Director of Industrial Security, demanding to know whether he in fact was regarded as a security risk, and if so, why. He threatened court action in the absence of a reply.

The barriers fell with a crash. X had not been given security clearance, it seemed, because he had lived in so many countries, and RCMP enquiries "therefore took a long time." "After careful study," wrote the Director of Industrial Security, it had been found there would be no further objection to X's working on defense contracts. (If he got his old job back, this would mean he could go on building barracks).

The lesson of this is that a man was condemned, without trial, to shame and unemployment. He was saved only by a friend's persistence. He still doesn't know why he was suspected in the first place. More terrible, he should not, strictly speaking, even have been informed he was suspected. Most terrible of all, the whole thing may have resulted from the unsupported word of some informer. Will it happen to you and me, and to how many has it happened already?

And this isn't an old story. X got his clearance only this month.

—Doug Collins in The Calgary Herald

November 22, 1954

Labor Costs Reduced

Pittsburgh (AP)—A new piece of steel-making equipment designed to cut costs by eliminating such old standbys as the ingot and blooming mill is in commercial production in the United States. Koppers Company, Inc., manufacturer of steel producing equipment, is selling the steel man's dream after years of experimental work. It is called a continuous casting machine.

For almost a century the industry has been pouring ingots, then trimming and then reheating them for the blooming mill.

In blooming mills the ingots are rolled and pressed into billets for steel bar making; slabs from which steel sheet and strip is rolled, and rounds from which tubing and wire is drawn.

The continuous casting machine would eliminate all of this. It is designed to take molten steel from open hearths—or electric or Bessemer furnaces—and cast it directly into any one of the three forms.

Such a machine naturally would reduce labor cost and plant spread requirements. . . .

100 Tons — 50 Seconds

Wall St. Journal, Marion, Ohio — A giant coal stripping shovel as high as a 12-story building and claimed to be the largest land vehicle in the world, is being built for the Hanna Coal Co., division of Pittsburgh Consolidation Coal Co. by Marion Power Shovel Co. . . .

. . . Said to be about 50 percent larger than any existing equipment of its kind, the unit will weigh five million pounds, including one million pounds of ballast.

The shovel is so large, Marion engineers report, that an office-building type elevator is being built to the control section, carrying 1,000 pounds or three passengers.

When placed in operation late in 1955, the mammoth machine will help get at coal seams lying approximately 90 feet below the surface, moving close to 100 tons of earth every 50 seconds.

SCIENTISTS WARN

Even in the face of warnings from eminent men of science, our military 'greats' and diplomatic 'would-be greats' under Price System dictates continue their anti-social and destructive pursuits — like children playing with matches around a powder keg.

Labor, Dec. 4, 1954—"A somber shadow lies over the promised atomic age. It is a threat to the continued existence of man on earth."

The peril, Thomas R. Henry, science editor of the Washington Star, wrote, "is not the frequently voiced threat of slaughter and destruction in war on an unprecedented scale, but of the effects of a hidden, insidious, largely undetectable and uncontrollable poison which perhaps is capable of destroying the human race as a biological genus.

"This is the recent warning of some of the world's foremost geneticists. They have been discussing it, largely in highly technical papers before specialized audiences. Now men like Professor A. H. Sturtevant of California Institute of Technology; Dr. E. D. Adrian, president of the Royal Society of London; Dr. Herman J. Muller of the University of Indiana, and Prince Louis de Broglie, a leading French physicist, feel that mankind at large should be made aware of its peril."

Henry based his articles on weeks of research and talks with leading geneticists—the scientists who study heredity and the reproduction of species.

The atomic "poison" these scientists fear, Henry emphasized, is not the direct destruction of A-bomb or H-bomb blasts. Nor is it the atomic radiations in the area near such explosions. Instead, it is "the slowing increasing background radiations of the earth itself, including the atmosphere and the seas, which may be the aftermath of both American and Russian experimental explosions of atomic bombs, and possibly from efforts to develop atomic energy for peacetime uses.

"Over a relatively short time," Henry reported, "such radiation presumably is increased equally for everybody on earth by an American explosion in the South Pacific or a Russian explosion in Arctic Siberia."

What the scientists fear is the effect of this increased radiation on human "genes." The genes are invisible minute particles of protoplasm, joined together in "chromosomes," which are passed on in the germ cells in reproduction and which determine the biological characteristics of succeeding generations.

The geneticists know, Henry explained, that increased atomic radiation can cause "mutations" (changes) in the genes of some lower animals. The individual whose genes mutate doesn't feel anything. Instead, it's his descendents who suffer. In fact, the effect of gene mutations may not show up for a number of generations.

It's agreed, however, that 99 percent of all gene mutations are harmful. In some cases, in the end, they may mean sterility, stillbirths or monsters, though more frequently the result is some form of "hidden disease," according to Dr. Herman Muller, Nobel-Prize-winning geneticist.

The gravest question is: How many of these radiation-mutations take place in the human race, and how much background radiation—as measured in "roentgen" units—can the human race survive?

"Dr. Muller's thesis," Henry reported, "is that 20 roentgens is about the limit of what the human race—not the short-lived individual to whom it would make no difference—can stand comfortably. Experience with lower animals indicates that this amount will cause about two out of every ten children born to suffer 'genetic death.' That is, they will be the end of their lines.

"Dr. Muller's own calculations," Henry ominously added, "show that the American people are already quite close to this 20 roentgen average."

". . . The implications of the scientist's warnings are so far-reaching, however," Henry added, "that they would seem to justify almost any amount of research, national and international." But no such big research program has been undertaken, although the Atomic Energy Commission is financing some studies. Instead the big money, in both America and Russia, goes to making more and more atomic bombs.

Hollywood, Calif., (AP)—David Schoenbrun, CBS Paris correspondent, said recently that French Premier Pierre Mendes-France has held secret talks with President Eisenhower and State Secretary Dulles because he fears continuing H-bomb experiments are endangering the existence of the human race.

Schoenbrun said one of France's top theoretical physicists, Prince Louis Debroglie, made an alarming report to the French Academy of Science two weeks ago that the danger point in atomic saturation of the earth's atmosphere has been reached and may have been passed.

THE GREAT DIVIDE

As the history of 1955 is being written, it will become increasingly evident how near North America is to 'the crossing of the Great Divide' between the old obsolete Price System and the new functional social order; between scarcity and abundance; between wanton waste and conservation of non-replaceable resources; between fear of poverty (leading to all forms of crime including the political pork barrel and log rolling), hate and war and a higher plane of civilization in which, for the first time in history, depravities can be eliminated; between idle time (due to lack of purchasing power) and free time to enjoy constructive pastimes.

For many years Technocracy has been analyzing the effect on the social order of technological progression which has bridged the long passage from hand tools to mechanization, and is now bridging the short passage from mechanization to automation. Automation — the push button method which is producing an abundance — is unidirectional and irreversible. It is forcing changes of environment which could not be brought about by propaganda nor stopped by wishful thinking.

Many people are enjoying the end products of advancing technology but do not realize that new folkways evolve with changes in environment. This is evidenced by an article appearing in a recent issue of The Eastern Idaho Farmer in which the writer, after reading from The Technocrat magazines, quoted from them at great length — how we stress the great strides made by science and technology that are continually displacing man-hours of work. Technocracy's findings have definitely shown that it is most probable that on this continent we will produce all that can be consumed by the total population with only the citizens between the ages of 25 and 45 working four hours a day and four days a week during half the year. The writer grasped the idea of physical changes, but ended his article thusly:

"What in heaven's name would people do with themselves if they could afford to be idle clear around the clock? Go fishing? That would become wearisome in no time. Lie around and get fat? Allow their muscles, brains and everything else to degenerate and waste away? For if they solve, without labor or effort, the problems of abundance and distribution, what will there then be to challenge and develop their talents and energy? It is too horrible to think of.

"Yet I do solemnly assure you, not only that there are intelligent persons in this country who want such a condition and militantly propagandize for it, but that such a condition, barring devastating war, is approaching. Let those look with optimism to the future of machines who can. This space cannot, for the reason that under such a system the evil will inevitably be greater than the good."

The profound effect that science and technology has had on the world cannot be underestimated. What we call a 'high standard of living' could not be possible without the acceptance of the new and the discarding of the old. To realize fully that our social order is already in a state of transition from a semi-agrarian to a high-energy civilization, one only has to read the daily press of the continent which has been forced to take cognizance of what Technocracy has been propounding these many years.

Electronic devices are being put to work quietly and without fanfare. I.B.M. states that 119 of its large size computers have been ordered or installed; Remington Rand says 61 of its Univac Systems are installed or on order; Western Union announces the installation of new intrafax machines — these new machines handle larger copy at higher speeds than the earlier facsimile machines which have been in use for several years; in Cleveland an electronic device measures the speed of cars passing the school zones — the device sets off a siren if the car is exceeding the speed limit (what a weird feeling for the speeder).

In chemistry the same rapid changes are taking place. Synthetic materials, pliable as rubber, soft as silk and hard as steel, are being manufactured; there is on the market a material that is like putty and yet becomes as hard and rigid as steel; a rival to foam rubber is now being produced; color is being added to a new grease for cars and it not only looks pretty but lasts longer.

Another indication of the distance we have come from an era of scarcity is the stockpiling of surpluses. Much publicity is constantly being given to the storing of food stuffs and other commodities. And now the distributors of paper-back books have been caught in the net of rugged individualism, and have to destroy millions of their unsold books. It is reported that a distributor in the Midwest had stored so many paper-back books above his office that the floor collapsed and the books fell down around his ears.

Since the end of World War II, the electric industry has shown 90 per cent increase in generating capability. Over 19½ million families have acquired refrigerators and 27½ million bought television sets. Many homes now have at least nine types of electrical gadgets. These gadgets are acquired mainly via the installment plan inasmuch as the current purchasing power cannot begin to buy the current production. This disparity will continue to increase with the increasing automation. Small wonder we have 'give-away' programs on television and radio!

We must not despair of making the social advances that will enable us to live together in the new

world that science and technology are building around us. These advances will bring changes in our folkways and mores.

We will be freed from the necessity of chiseling our fellowman in making a living. In this new freedom, an environment for a humane civilization will be built. With time to reflect, to study, and to achieve, man will really live instead of making a living. With all citizens having assurance of ample purchasing power, man can enjoy the luxury of integrity. With balanced distribution of the abundance, man will have freedom to choose his occupation, also unlimited opportunities for the outlet of his creative talent.

The underlying thought that runs through the article in The Eastern Idaho Farmer proves why it is so necessary for the Organization of Technocracy to stimulate the citizens of this Continent into visualizing a sensible, sane social system and to become accustomed to the idea of leaving behind the Price System, and cross the Great Divide into the New America. You may disagree with what you conceive Technocracy to be but you cannot disagree with what it is any more than you can disagree with the laws of gravitation or thermodynamics.

However, Technocracy is not actuated by the premise of whether freedom from toil is good or bad for the population. We are merely pointing out that the days of human toil on this Continent are nearly over and that North Americans are going to have a lot of free time on their hands whether they like it or not. In fact, it is so near at hand, we suggest you start thinking about it, and start becoming psychologically adjusted to the idea.

Join Technocracy Now!

Men of Science and Invention

"It is my belief," Mitchell Wilson declares in his foreword to this enthralling pictorial history of American science and invention, "that to be a civilized American today one must be as aware of the mainspring of contemporary America—its technology—as Americans of a hundred years ago were aware of the soil.

"Science became a strategy for exposing the unknown world; invention became the way to give twelve hands to man beleaguered in his struggle to clear the Continent."

The Yankee was not born with his omnicompetent ingenuity. The handicraftsmen of the young Republic are shown in this book to have been far behind their European contemporaries in technical skill and equipment. The first generation of American inventors had first to invent themselves. Fitch, Fulton, the Stevenses, Whitney, and Morse, whose inventions secured the foundations of American industry on the seaboard and opened the way to the West on the inland waters, had careers of disappointment, frustration, and even tragedy. It was in the generation after the Civil War that the American inventor came into his heritage. Westinghouse, Edison, Pullman, Bell, Eastman, Ford, all became corporate as well as household names.

Mitchell Wilson and his pictures show, time and again, that the originality and profundity of an invention bear no necessary relationship to the fame and fortune it earns its inventor or to its consequences upon the lives of others.

The DeForest triode electron tube and the Wright brothers' airfoil are inventions as basic almost as the wheel and as consequential. But Eli Whitney's cotton gin was a gadget he thought up in fifteen minutes conversation. It made possible the cultivation of the green seed cotton, re-established slavery as an economic force and led on inexorably to the Civil War. . . .

. . . Successive chapters contrast the careers of Edison and Gibbs. The more familiar name is, of course, that of the man who ventured in every field, from electricity to agriculture. The sum of his work is that he made ingenious and practical contributions to major movements in technology arising from the more fundamental work of others. Josiah Willard Gibbs was a theoretician; he worked all his life, unknown to his fellow Americans, at the outermost boundary of human knowledge and perception on a single central question. The sum of his work is that there is no discipline of science and technology today that is not pervaded with Gibbs' equations for thermodynamics. He is the single American who ranks in the succession from Newton to Einstein.

"Gibbs is a measure of what American science can be," says Mitchell Wilson. . . .

. . . Meanwhile, by 1950, the vision of the Founders had come to reality beyond their imagination: "The fruits of science and invention were everywhere at hand." But something had gone wrong: The decade's greatest scientific and technological triumph was a "semi-clandestine military project almost divorced from the ordinary life of mankind," and the freedom of science was compromised by regulations in the name of security to which Americans of only two decades ago would have refused to submit. . . .

. . . It is the potential that is latent in every American. Its suppression, however temporary, may well be the reason for the 1950 American despair; its eventual release may well be America's greatest, most joyous victory."

—Review by Gerard Piel,
Publisher of Scientific American

Refrigeration — New Mining Technique

Unity, Sask., (CP) — A giant refrigerator may prove the key to the first successful development of Saskatchewan's huge potash reserves.

The refrigerator will have pipes running hundreds of feet into the ground around a 12½-foot shaft being bored by the Western Potash Company of Calgary in search of the fertilizing mineral near this north-western Saskatchewan town.

The shaft now is at the 500-foot level. It has almost 3,000 feet to go to reach the potash beds.

The refrigeration technique was adopted after months of trouble in boring through crumbling formations and water zones. It is the first time it has been used successfully in Canadian mining.

The firm struck quicksand near the surface and an artesian well zone at 235 feet. The foundation of the shaft crumbled and water oozed in continuously.

At the 160-foot level, a drilling chamber was excavated and holes drilled around the shaft area. A refrigeration plant was set up in the chamber and brine pumped down plastic pipes until the entire shaft was frozen solid.

Freezing stopped water from pouring in and solidified crumbling material. Crews quickly poured in an interior lining of reinforced concrete.

The company hopes the 1,000-foot level will be reached in three months.

The shaft is the first attempt to mine the material in Saskatchewan, estimated to have the world's largest deposits. Western holds development rights to 120,000 acres estimated to contain about 2,500,000,000 tons of potash ore.

The Potash Company of America, largest producer in the United States, signed an agreement with the provincial government last year for development rights on 100,000 acres near Saskatoon. The company agreed to start a production shaft and other facilities by May 1, 1956, at a cost of $3,000,000.

Canadian potash supplies now are imported from the United States, Germany and France. There are deposits in Russia and Palestine.

New Surgical Device

University of California, Berkeley — Surgeons can now locate and remove — "by ear" — kidney stones, bone fragments, and hard objects that sometimes become lodged in the windpipe with a new device developed by a University of California scientist.

Dr. Ralph Stuart Mackay, assistant professor of electrical engineering at the University's Berkeley campus, described the new development at a recent meeting of the American Institute of Electrical Engineers in Los Angeles.

Dr. Mackay calls the device a "foreign body localizer." It operates by allowing the surgeon actually to hear a noise when his forceps strike the quarry — whether it be a peanut or pin or coin in a child's windpipe, or a kidney stone.

Whenever the surgeon's forceps hit a hard object embedded in soft tissue, Dr. Mackay explained, very slight vibrations are produced. These vibrations, he said, are strong enough to be transmitted through the jaws of the forceps, into the handle, and thence into a fine, copper wire attached. The vibrations — or noises — pass along the wire and into an encapsulated gadget that converts them into an electrical signal. That device is a sound transducer, such as is commonly used in a phonograph pickup. An amplifier, attached to the transducer, picks up the signal and converts it to a clicking that is audible to the surgeon.

"In that way," said Dr. Mackay, "the surgeon can tell for sure when he has a hold on what he is after. Unless he is sure that he is extracting the foreign body, he may yank out some useful tissue instead."

Sacramento, (UP) — California's mental hospitals are now getting one new case every 29 minutes, Dr. Walter Rapaport, director of mental hygiene, said today.

Rapaport said more than 18,000 persons entered mental hospitals during the last fiscal year.

Power Demand Tripled

Lethbridge Herald, Nov. 20, 1954, Edmonton, (CP)—Alberta, faced with a power demand that has nearly tripled in the last 10 years of industrial expansion, is in the midst of 10 major construction and expansion projects that will have doubled the province's generating capacity by 1956.

Alberta's problem is not one of where to find electricity. The estimated 620,000 kilowatts the province will require within six years could be almost entirely obtained from the Bow River that flows through Calgary.

However, economic hydro development is limited. Of the 10 projects now under way, only five will utilize water power.

Largest of the developments, an $8,000,000 steam-generating plant near Lake Wabamun, 40 miles west of Edmonton, will draw for fuel both oil and natural gas from the productive fields that surround the site.

The Wabamun project, undertaken by Calgary Power Limited which develops roughly 65 percent of the province's power, will have a capacity of 66,000 kilowatts for its first unit, scheduled for operation by the fall of 1956.

(Technocracy's design would make it possible to conserve our non-replaceable resources, which Price System 'economics' cannot do.)

Automation and Photography

Los Angeles Mirror, Jan. 21 — Ever wonder what happens to your film between the time it's dropped and when you get it back?

. . . The photo finishing business has gone technological and it's mostly automatic.

. . . A new building has been constructed especially for film finishing. The plant itself has no windows at all, and all air is conditioned and either heated or cooled before it enters the plant, a precaution to keep it dust free.

Ceilings are high, the walls are painted a soft green to eliminate reflections, and doors are eliminated wherever possible. Replacing doors are sharply curved "light-baffle" corridors which prevent light from one room passing to another.

Every piece of machinery sits in a small "sump" or drain foundation of its own, and a sewer connection leads out of the sump. A special 8-inch sewer tilts at a sharp angle (two inches to a foot) to avoid plugging, and all other service plumbing, such as lavatories, is separate.

All water is filtered, and even special electric connections lead into the building. A special transformer feeds a separate line to each of eight projection printers in the laboratory, thus guaranteeing even current.

Films are passed through a light-tight door into a small room filled with two big machines that look like the steel-work base for a skyscraper.

Films are stripped of paper and attached to a rack on one of the two machines. The machine then automatically develops, fixes, and washes the rolls under exacting requirements, and moves them through another light-tight door into a drying room, where infra-red lamps furnish drying heat.

One machine is for ordinary film, the second for fine-grain work, such as 35mm candid camera film. Strength of developer and other chemicals is maintained at a fixed level by constant-flow valves. And each day before developing begins, test strips are made and compared in a densitometer with standard-density samples shipped by Eastman Kodak Co. from Rochester, N.Y.

In the drying room, girls with white cotton gloves remove rolls of film from the machine, inspect them and take them to the printing room, where they are placed in holders on the eight printers.

Here is one of the major innovations. The printing paper is in rolls, the exposure is calibrated to a far more exact level by electronic control than the human hand could obtain. The operator presses a foot lever to expose the film, and the electric eye cuts off the current, even "damping" afterglow from the printing light.

A novel "beamsplitting" glass window turns a part of the light from the projector onto the electric eye, and automatic controls gauge the printing.

Once printed, the paper is taken to another fantastic new machine — the automatic developer. The rolls are fed onto "leaders" — long strips of paper — which take the paper over an intricate set of rollers and through the developer, fixer and wash.

The chemicals are controlled by carefully calibrated valves, which provide an even flow of chemical and keep the strength constant.

From the automatic developer the rolls go through an aperture onto a big ferrotype drum drier and then are cut into individual pictures. . . .

(*Another industry is eliminating man-hours*).

560,000 Horsepower Increase

Ottawa (CP), Saskatoon Star-Phoenix — Potential power resources of the northern British Columbia-Yukon area in which the Northwest Power Industries, Ltd., plans development, have been raised a further 560,000 horse-power from the previously estimated 4,300,000 horsepower.

A report prepared by J. M. Wardle, consulting engineer, says a dam and a power plant on the Taku River near its meeting with the Inklin River, would use the waters of the Taku and northern watersheds to provide the increased potential. Preliminary surveys of the site are planned for this year.

The original 4,300,000 horsepower, according to proposals already announced, would be developed by diverting the waters of the upper Yukon, Dezadeash and Salmon Rivers into the Taku — with the expectation that ultimately more than 5,000,000 horsepower could be developed.

Mr. Wardle's report says the project can be made easier and less expensive by using Sloko lake as a power canal, thereby eliminating a mile of main tunnel. . . .

CHANGE OF ADDRESS

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TECHNOCRACY

North America's Only Social Dynamic

WHAT?

Technocracy is the only North American social movement with a North American program which has become widespread on this Continent. It has no affiliation with any other organization, group or association either in America or elsewhere. The basic unit of Technocracy is the chartered Section consisting of a minimum of 50 members and running up to several hundred. It is not a commercial organization or a political party; it has no financial subsidy or endowments and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are $6.00 which are paid by the member to his local Section. Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHEN?

Technocracy originated in the winter of 1918-19 when Howard Scott formed a group of scientists, engineers, and economists that became known in 1920 as the Technical Alliance — a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934 Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundation of the present Continent-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHERE?

There are units and members of Technocracy in almost every State and in every province in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces. Members of Technocracy are glad to travel many miles to discuss Technocracy's Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHO?

Technocracy was built in America by Americans. It is composed of American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this Continent. Membership is open only to American citizens. Aliens and politicians are not eligible. (By politicians is meant those holding elective office or active office in any political party.) Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher, or housewife—so long as you are a patriotic American—you are welcome in Technocracy.

The TECHNOCRAT

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American Cultural Destiny Decrees . . .

INTELLECTUAL MATURITY

Yesterday, we had but the culture of the leisure of the age of privation and scarcity; the culture of a leisure that flourished in the hotbeds of disease, bestiality and filth that typified the past.

Today, we are discarding the culture of human toil and leisure, and are relegating this musty culture to the museum and the library. We have with us the task of becoming cognizant of the way to live. We are evolving a new zest for life. We are learning how to play, even as our fathers learned how to work, to swink, and lather in the fields and at the bench.

— SECTION STAMP —

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JUNE 55

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IN THIS ISSUE . . .

- THE FAILURE OF DEMOCRACY
- The Synthetic Hero
- Forgive us our Debts
- Potentialities of Automation
- End of the Line
- Looking Ahead

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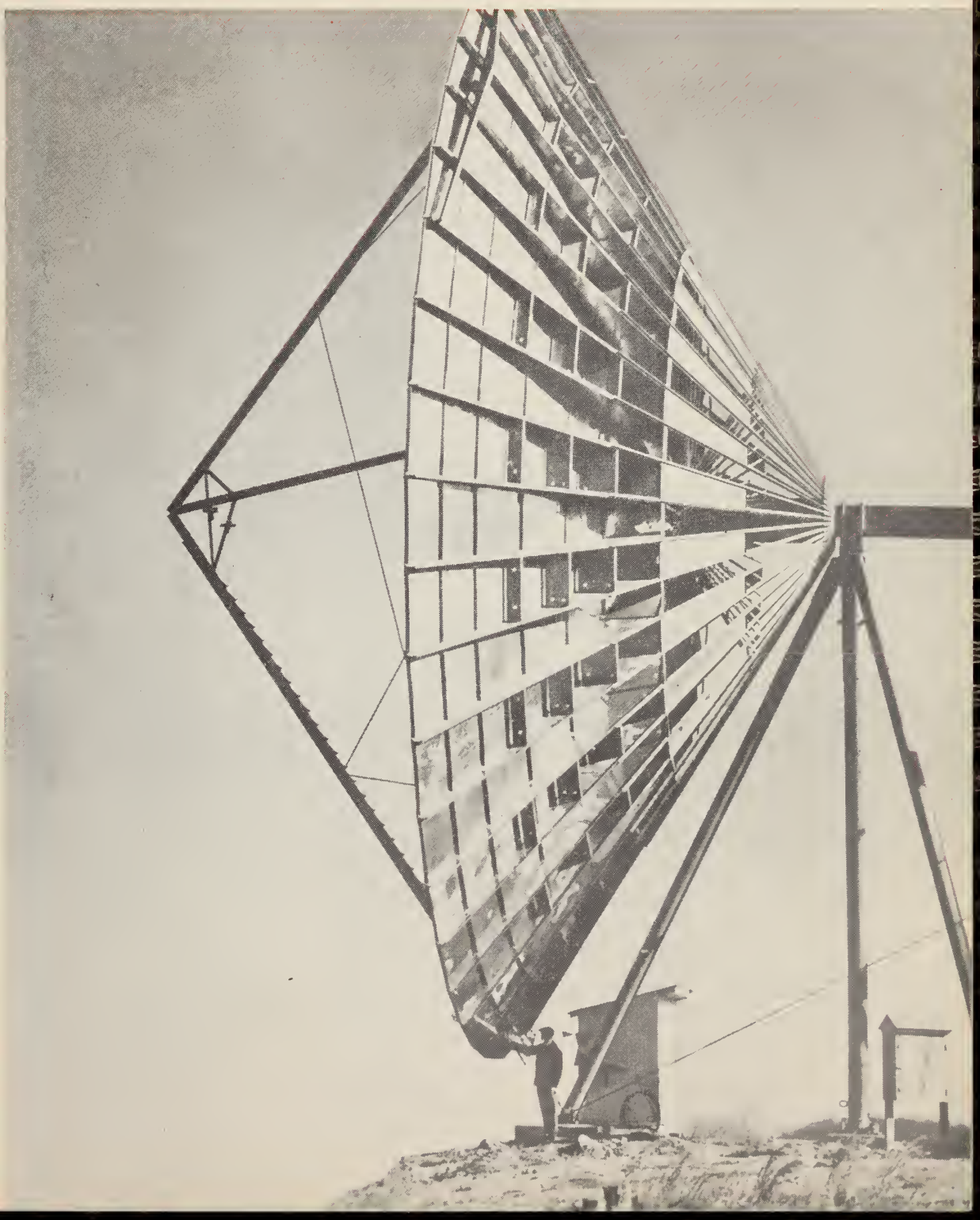

The TECHNOCRAT

JUNE, 1955

Editorial

'Methinks the Price System'

Americans have become automation-conscious, with all the glare of glamorous publicity given by the commentators, and writers from many types of magazines; and of course by Technocracy's publications, since the Organization of Technocracy was formed for the purpose of showing that the increasing use of technology and science will bring social change.

Automation is causing consternation and confusion within the ranks of those who desire to continue the even tenure of the way of our ancestors, but progression is a process of life and cannot be stopped. Price System apologists are constantly contradicting themselves as to the effect that the impact of automation is having and will have on our economy. This is evidenced by many of their statements such as the one that appeared in the February issue of Fortune magazine: some labor leaders were trying "to revive the bogeys of the 'technocrats' who years ago warned us what the shift to machines . . . would do to unemployment." It was also inferred that the Technocrats had been proven incorrect in their analysis. But a few paragraphs further on they stated: "Actually, if we can keep unemployment from 1955 to 1980 at 4 to 5 per cent of the labor force, it will be an extraordinary accomplishment, especially after 1960 when the bumper crops of babies born during the last twelve years begin to flood the labor market."

Then, in the April issue of Harper's magazine is another article concerning automation which is indicative of muddled analyzing. The introduction to the article states: "The revolution that uses machines to run machines can bankrupt a business, create new demands for educated managers, make office workers obsolete, or introduce a welcomed stability into our economic life." However, in the last paragraph after seven pages in which the author tries to uphold the Price System against the impact of increasing automation, he states: "Above all, there can be little doubt that automation is not 'technocracy' under another name and that the 'push-button factory' is not its symbol. Automation is not gadgeteering, it is not even engineering, it is a concept of structure and order of economic life, the design of its basic pattern integrated into a harmonious, balanced and organic whole."

This attempt to belittle Technocracy's scientific analysis and synthesis regarding the next most probable state of North America's social system, is evidence of the psychotic fear of the politico-business interests. No solution to our social problems is possible short of a fundamental redesign and reconstruction of our entire economic and political structures. Only Technocracy's blueprint for the Technate fulfills this fundamental rudiment which will make possible the combining of the functional capacity of the human variable and the technological equipment into a harmonious orchestration for the operation of the North American Continent.

Eliminate confusion; join Technocracy NOW!

THIS MONTH'S COVER

This new 60-foot experimental antenna, said to be the largest in the world for super high frequencies, which can pick up television and telephone signals sent directly through space for 200 miles. Signals are sent over-the-horizon in a tranmission technique (without wire lines) expected to provide longer communications bridges over water, desert, mountains and rugged terrain. In the present microwave radio relay network across the U. S., radio relay stations are 30 miles apart. The new antenna is situated on a hill at Holmdel, N. J. where it had to be constructed front side up and then turned over on its side to face the direction from which it receives signals. —Photo Courtesy 'Wide World'

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THE FAILURE OF DEMOCRACY

And the Rise of a New Social Order

Nearly two hundred years ago, the ideal of Democracy smoldered in the hearts of men who aspired to a better world for mankind. At that time, the idea of democracy (as an idea) had some merits. But subsequent history has shown that it was cast in the wrong role. As a transitional device for breaking out of the repressive stranglehold of the political aristocracy, the Church, and the landlords, it had a useful place in the affairs of human advancement. But, as an end goal, capable of administering a 'heaven on earth,' it has been proven to be a miserable flop.

In fact, democracy has so many internal weaknesses that it was never able to achieve viable birth as a social experiment. Consequently, there are no democracies in the world today and there never have been any. To call an area dominated by bully gangsterism or big business enterprise a democracy is a deception and a fraud. Yet, the Big Lie propagandists consistently refer to such places as Greece, Formosa, and Venezuela as Free Democracies.

A democracy, strictly speaking, is a society wherein the people as a whole vote directly on the issues and the majority vote decides the issue. In theory, it implies that the people as a whole know what they want and know what decisions to make to achieve it. But, even if all the people were intelligent and all of the problems voted on were simple and of immediate and direct interest to them and each knew exactly what he wanted, the practice of democracy would still be faulty.

Suppose, for example, the issue were this: Shall coffee be served with cream or without cream? Theoretically, this is a problem that is simple enough and near enough to the hearts of the people that the decision should be easy. But, whichever way the majority voted, a sizable minority would be unhappy and discontented with the outcome. The same would be true if the issue involved sugar or no sugar in the coffee. Also, if the issue were between coffee and milk.

You may object to our example on the basis that it is not a fair exhibit of the democratic procedure; that it is not a typical social issue. But, we insist, the way we presented the problem is strictly and truly democratic. Any other issue would serve equally well as an example.

Or you may suggest, why not make coffee, cream, sugar, and milk available to all and let each choose his own kind of drink? This alternative may have a name, but it would not be democracy. Let us call it Individual Selectivity. That involves another kind of administrative technique — one that we shall have more to say about later.

Under democracy, theoretically speaking, the decision of the majority of voters is the one to be adopted and imposed upon the whole. Thus, in the democratic farce of November 2, 1952, it was decided that one 'Ike' Eisenhower should reside in the White House and be called President for the next four years, although more than 27 million voters chose otherwise. It is evident that democracy, if practiced in any form, sows the seeds of discontent and rebellion among the people it is intended to serve.

Regardless of its weakness, democracy was feared and hated by the aristocracy of the 18th century, much in the same way communism is feared and hated by private enterprise today. But, now, democracy is not feared; it is only despised. The ruling elements in the society have discovered the gimmicks that can be used to manipulate it to their wills and render its effects impotent.

U. S. A. — A Republic

One gimmick is that of 'representation.' The people have been 'conned' into believing that democracy is too unwieldy for them to handle; and that, if they get together in groups and each group chooses a representative from among its members to uphold its views, the will of the people can be served 'just as well.' If the representatives did truly represent the people, 'representative democracy' might serve nearly as well as democracy in the pure form. The important aspect of representation is that it removes the voice of decision concerning the affairs of government one big step from the people directly and it relieves them of the responsibility of thinking about such matters.

It was soon apparent to the aristocracy that most people are contented to let their 'representatives' study the problems and make the decisions so long as they (the people) do not have to be kept informed and vigilant themselves. So, it was simple enough to get the government removed still another step away from the people; with the result that an interested-for-the-occasion 'majority' of the people would elect certain personalities to 'represent' them, then leave the deciding on issues up to these 'representatives.' At that stage, the process ceases to be democracy as such; for, by definition, the government is now a republic.

Once a democracy is transformed into a republic, the economic aristocracy is in a position to manipulate the government to serve its interests. This manipulation takes many specific forms, ranging from promoting the selection of favored representatives and sabotaging the selection of unmanageable or radical candidates on one extreme to intimidation or bribery of those who are elected on the other extreme. As a consequence, the republic passes, for the most part, under the management of stooges who serve the dominant economic interests; and these stooges, instead of 'remembering' that they represent the people, frequently assume the attitudes of parasitic masters over the people.

The final step in the subversion of democracy is bringing the hierarchies of the dominant church organizations into alliance with the economic and political oligarchies. Once this is accomplished, the brand name 'Democracy' can be eulogized to the high heavens with 'safety' and the people can be spit on in proper fashion. It is only a short way from there to that ultimate in totalitarian regimentation, fascism.

In a republic (alias democracy), the people must be kept deluded with the belief that they are the ruling voice; that the electorial system safeguards their interests. This can be achieved in a surprisingly simple manner. The farce of a national election is staged every two years, four years, or five years (as the case may be); the public turns out, marks a piece of paper or pulls a lever, then goes back home satisfied that it has made a decision; and the same old rackets continue to flourish at public expense. It is observable in a republic that no issues of significance are put up for popular vote. Also that the initial selection of candidates to be voted on by the public is made in a highly dubious manner. A little closer observation will reveal that most decisions affecting the public welfare are made in closed executive sessions rather than in legislative assemblies.

Special Treatment

Even so, special preparations are made to 'take care' of the situation should anything 'go wrong.'

One variety of safeguard is the formation of 'civilian' organizations, made up of staunch supporters of the status quo, composed, for example, of veterans, church laymen, businessmen, women's auxiliaries, and People's Committees. These organizations have no official standing in the government, but they can be used to bring pressure to bear and, on occasion, do pick-handle work wherever dissidence begins to manifest itself.

In spite of all these precautions to 'make democracy work' for big business, there does develop on rare occasions a rebellion among the people which gets out of hand and a government somehow gets into power which is anathema to the dominant economic interests. This calls for Special Treatment. We have seen this Treatment applied with success in Venezuela, Colombia, British Guiana, Guatemala, Spain, Iran, and many other places; and it has been attempted unsuccessfully in other places, such as Russia, China, Indo-China, Kashmir, and (for the present) Costa Rica. An internal faction may stage a coup, or start a civil war; or a 'government in exile' may organize a 'liberation movement'; or a friendly power may intervene to 'restore stability.' Such Special Treatments can always depend upon assistance (if not outright initiation) from foreign governments which have similar ideals. The United States has participated in more than its share of Special Treatments beyond its own domain.

The nearest approach to a situation calling for Special Treatment internally in the U. S. was during the Great Depression, when the Roosevelt New Deal administration 'bought off' a popular revolution by means of a few rather mild compromises. But even this slight degree of reform was bitterly resented by the Old Guard. However, no effective putsch could be organized, for there was no effective opposition leadership or program; and the New Deal was too popular to start a civil war over. Roosevelt's catapulting the country into World War II turned the tide back in favor of reactionism. Even so, there are still smoldering resentments against the appeasement of the public by the New Deal that breaks out now and then in the form of charges of 'twenty years of treason.'

Skullduggery

In the Western World, the act of voting for a choice among two or more candidates for political office has become the 'symbol of freedom.' A casual view of the political process in the United States is enough to disillusion any intelligent person regarding the worth of this type of freedom. The preliminary selection of candidates and the final elections are prize exhibits of hybrid crosses between chicanery and moronity. In the selection of candidates to run for election, the big economic interests exercise their skullduggery with greatest effect, with the result that the ballot is heavily loaded on both sides in favor of a pro-business administration. The final election is where moronity takes over. Anything but intelligence is used to decide the vote of the individual. The majority of citizens are die-hard party-voters, marking the same column on the ballot time after time. A minority of voters are 'independent,' meaning they are pliable to moronic persuasions; and it is to this moronic fraction that the electioneering is mostly directed, for usually its vote decides the outcome of the election. In such a situation, the only intelligent thing that one can do is abstain from taking part in the nonsense. But, if we choose not to vote, the propagandists screech at us, What's the use of being free? If that is all there is to freedom, we may well reply, What's the use!

We suspect that all this talk of freedom and democracy is just so much glittering ballyhoo, employed to misdirect our attention from the real suppressions, deprivations, and looting that is going on in our society. There is ample basis for such suspicion, for example: Foodstuffs are being hoarded out

of sight, destroyed, and dumped abroad to keep them scarce on the home market and expensive to the consumers. Many other 'good things' of life are being kept from the people, either by planned scarcity and high prices or to preserve investments in obsolescence. The American people have never before been blessed with so much 'prosperity' in the form of available merchandise and credit or threatened with so much personal insecurity. Taxes have never been so high. Finally, but not least, our national affairs are largely in the hands of maniacs who are bound and determined to get this Continent involved in a thermonuclear war sooner or later, but preferably sooner.

Pretense Gone

Democracy was once supposed to imply social equality among people, with equal opportunities for one to advance in the society, and with equal rights under the law and in the courts. That implication isn't even seriously pretended anymore; at least not among educated adults, although it probably still appears in a few books used in grade schools and in the indoctrination booklets handed out to immigrants. Equal rights, equal opportunity, and equal justice are great American myths — all right for the individual to believe in when everything is going well with him, but damn poor things to rely on when needed.

The practice of democracy depends too much on things that are not dependable, such as: good will among men, acceptance of the principle that the majority is always right, and a sense of respect for the rights of others. But, even if these factors were achieved 100 per cent, other weaknesses would show up to invalidate democracy.

It is obvious that the ideal of democracy has never been transformed into actuality; and further, that it can never be achieved through the process of converting individuals to believe in it. However, some of the desirable aspects of the democratic ideal may be attained and others not only attained but greatly improved upon — not under the name of democracy or by way of the democratic process, but through an approach from a new and unexpected direction.

Science Forges Ahead

Let us be reminded that nothing is to be gained from philosophizing about society and man's place in society. All philosophy is based on assumptions; so there can be as many (or more) conclusions drawn as there are assumptions to construct philosophies upon. Let's not forget that most human tyrannies have a sound philosophical basis, including the tyranny of fascism; and the same can be said for the utopias.

Human advancement has come, not from philosophy or good will, but, from the application of factual knowledge to human use. Science and technology have done more for human progress in 300 years than all the 'humanities' ever hoped to do in 3000 years. Technology has proceeded on the functional basis of 'What can be done,' not on the philosophical basis of 'What ought to be done.' By means of the technological approach, the average lifespan of man has been greatly prolonged; human toil has been reduced to insignificance; material welfare has risen to potential abundance; and full individual opportunity is a real possibility. The completion of these advancements is held back, more than anything else, by philosophical assumptions that cannot be reconciled with a high degree of welfare for the entire population, among them certain philosophical notions which pose as democratic.

From a purely functional viewpoint — from what is physically feasible rather than what is philosophically right — the technologist proceeds to advance human longevity, health, comfort, material requirements, and freedom from toil. Further, in a technologically advanced society — as contrasted with a slave-powered, low energy society — the human individual is afforded a wide range of personal selectivity in the things he does and wants, whether it involves food, clothing, house furnishings, recreation, or hobbies.

Freedom Through Science

In any society, there are essentially three factors which contribute to individual freedom. These are purchasing power, free time, and individual selectivity. Anything else can be disregarded, unless one also wishes to include the factors of health and safety. No social philosophy can provide these elements of freedom, except to a small minority. But science and technology can make them available to everyone. Hence, we must conclude that the way to freedom is through science and technology rather than through democracy or the doctrine of good will among men.

It is inconceivable that human freedom could rise to a high state under the Price System, for the Price System is a device for restricting human activity, not enhancing it. Only in Technocracy can individual freedom be expanded to the ultimate.

Technocracy views the social problem as one of physical operations, wherein the significant factors are resources, energy, geography, and trained personnel. What can be done in the area with the population and resources at hand? That is the fundamental question asked by the social technologist. Within that framework, there are many details to consider, among them: health and sanitation; education and training; industrial production; service facilities; social control; recreation; public safety; defense. These are problems to be worked on by men and women trained in the scientific method and the technological technique, ranging from technicians who handle the routine operations to the Sequence Directors who are capable of designing and organizing large, complex sequences and viewing them in relationship with other sequences.

Some critics of Technocracy have referred to it as a 'government by experts,' presumably in contrast to government by charlatans and nincompoops. We are in no hurry to accept this 'government by experts' definition. These days, too many kinds of people pass as 'experts.' Our present government is loaded with 'experts' — experts on foreign affairs, experts on taxation, on government credit, on vote-getting, and on what-the-Russians-are-thinking. Those kinds of 'experts' have no place in Technocracy. So we shall set aside the word 'expert' when referring to the trained and capable personnel that will supervise the operations of the Technate. Technocracy is a governance of things and of function, not a government of men. The word 'expert' is not so much a functional term as it is a publicity ballyhoo term.

The social technologist views the society as a physical mechanism, to be operated in dynamic equilibrium over a long term period. The people in the social mechanism are recognized as a basic and important factor — the whole reason for the mechanism — but the social technologist does not get sentimental about them.

Some people appear shocked at the idea that the social administrators should not be sentimental about people. Yet, it is generally accepted (in professional circles at least) that military leaders must not get sentimental about the men they send into battle; nor that medical doctors should possess feelings regarding their patients; nor that judges should be emotionally concerned about the people they pass sentence on. Further, any sentiment that businessmen or professional politicians display toward people is pure pretense, assumed for 'public relations' purposes.

The sentimentalists have been trying to reform society for thousands of years and they made a botch of it. That is also one of the greatest weaknesses of socialist political parties, they get sentimental about people. In doing so, they fail to see the problem of the whole because they become obsessed with the problems of the individuals. Technocracy contends that, once the physical problem of the whole is resolved, the problems of the individuals will have been resolved also. This includes most of the subjective as well as the objective problems.

The labor unions are also inclined to view the social problem in terms of its specific effects on the individual members of the respective unions. The union leaders emphasize guaranteed work for their members rather than a redesign of the social mechanism. The CIO, for example, will never envision the problem of a Continent so long as it concentrates on a guaranteed annual wage deal for its members (be sure to read the fine print in the proposal) and so long as it sponsors sentimental gush on the radio. Organized labor could be a decisive force for accelerating the change to a new social state on the Continent of North America; but, first, it must achieve a new and broader perspective of North America's social goal.

Any social decision based upon a majority vote of the citizens, as we have pointed out earlier, is full of faults. The 'majority' vote may be contrary to the will and desire of a minority that may be nearly as large as the majority; and, under special circumstances, it may be in opposition to an actual majority of the citizens. Rarely do enough citizens understand even the simplest problems sufficiently well to make intelligent decisions concerning them; most decisions are derived from other than intelligent considerations. Further, the majority vote is subject to facile manipulations by small vocal minorities with special interests to push. In the broader view, the majority want too little and with too little zeal; and the memory of the majority is too short. The majority will not leave their squalor until some putrefaction develops that forces them to move; then, as soon as the worst of the putrefaction has been deodorized or perfumed, they want to return to the same old squalor. Democracy is not an instrument of social change. At best, it is useful only as a popular mania for breaking out of social bondage.

Further, democracy is not an instrument of freedom. It has no technique for providing ample purchasing power, needed to pull the people out of economic bondage imposed on them by poverty and want. It provides no means for liberating man from toil and other time-consuming routines. If man is to be free, he must have time in which to be free.

And democracy does not provide one with a satisfactory range of individual selectivity in one's daily living. Democracy is, at best, merely a device for allowing a group of people to arrive at a decision between two alternatives — with no guarantee that the decision will be either feasible or enforceable.

Political Concepts Obsolete

Technology has been the most effective instrument yet introduced for forcing social change. It creates situations which are irreversible and opens the way for further change. We need not dwell here on examples of change brought about in our lives by technological applications; they are everywhere evident to adults of the present day. Technology has made it impossible for North Americans to 'go back' to the way of life of their grandparents. What is more, it has provided them with a way of life that is so much more desirable that none (except, possibly, a few 'old cusses') want to go back.

Technology has built-in guarantees that it will work. If a mechanism is built that does not work, it must be redesigned and revised until it does work and perform the task assigned to it. Further, technology is dynamic and 'perfectionist.' It is never satisfied with the status quo so long as there is any room for improvement. The functional demand of the job to be done and the criteria of efficiency, equilibrium, and physical economy determine the trends in technology.

Social technology will not 'freeze' its progress so long as any people are denied adequate purchasing power to supply all their physical requirements; nor so long as human beings must supply effort and vigilance to the operation of the social mechanism;

nor so long as there are human wants that have not been fulfilled. Since we cannot conceive at this time how the ultimate in this trend can be reached, we can see no end to technological change. However, a high degree of social stability can be achieved almost immediately in the social mechanism if certain oscillating factors are removed from it, namely: business enterprise, political government, and interference by philosophical opinion.

A Technocracy is a social mechanism, designed and operated on technological principles. It does not pretend to be democratic, republican, socialist, fascist, communist, utopian, or totalitarian. In fact, it denies all political concepts. It is a functional device for handling a physical problem. It does not pretend to reform people, but it will surely change many of their specific behavior patterns. It does not intend to make people good, but it will make it difficult to be 'bad.' It does not claim to make people happy, but it will provide them with abundance, security, and freedom from toil. It does not promise spiritual glory hereafter, but it does guarantee physical comfort here and now.

If you like to philosophize, you can take it from there. But, first, it might be a worthwhile idea to make sure that Technocracy is installed as an operating reality, so that you will have the freedom to philosophize.

—Wilton Ivie, CHQ

The Synthetic Hero

'Reprinted from The New Statesman and Nation, London, England, January 22, 1955, with special permission of the publishers.'

No one is forgotten more quickly in American politics than an unsuccessful candidate for Vice-President, and few of those who succeed can be remembered. What American knows who Levi Morton was, or Hobart Marshall and Curtis? Yet all served within living memory, with only one missed heart-beat between them and the tenancy of the White House. This fate, at least, is not courted by Richard Milhous Nixon, the man who has turned a sinecure into a responsible post with excellent prospects. None of his predecessors has risen so high so fast, nor have they served a President who is so willing to share his burden with a professional politician, so thankful that the mate can, and often does, steer the ship. For Nixon is not left to preside somnolently over the Senate, nor to wander around Washington looking for something to do; he is an ex-officio member of the Cabinet; he serves on the National Security Council, which has superseded the Cabinet in many high policy decisions; and he handles the delicate relations between the White House and the leaders of Congress. Whether or not President Eisenhower is consciously grooming him for succession, Nixon is the first Vice-President who by training and experience would be competent to take over if, as happened one day in 1945 to Mr. Truman, "the heavens fell on him." Already, as a member of the White House staff said recently, "for all practical purposes he's running the Government here in Washington."

Richard Nixon's career has been like the course of a lucky player at Snakes and Ladders. At each crucial moment, he has thrown the right number. And though it has sometimes seemed that luck has been helped by loaded dice, in forty-two years he has written himself a biography that is almost too perfect. When he was seven, his grandmother, Almira Milhous, gave him a portrait of Lincoln inscribed with the verse:

> Lives of great men all remind us
> We can make our lives sublime,
> And, departing, leave behind us
> Footprints in the sands of time.

This text may still have been hanging above his bed when, as a student at Whittier College, he listened to his history teacher, Professor Smith, insisting that events were shaped by great men, not by social forces — a theme to which Nixon returned several times in praising Eisenhower in the 1952 campaign.

Nixon himself is not the stuff from which great men are made. He lacks principle and imagination. But he has all the elements needed for success in modern America. Eisenhower thinks that the Nixons, with their two small daughters, are "the representative American family." They look right and they act right. Nixon might be mistaken for a car or insurance salesman, or perhaps an account executive in an advertising agency. Though he is a Quaker, he chose to enlist and had a good war record in the Navy. Before that he had worked his way through college by working part-time in the family grocery and gas-station in Whittier, California. A good academic record and five years as a practicing attorney showed that he had ability, and gave him experience that was to be immensely useful when he came to serve, in his first months in Congress, on the Un-American Activities Committee. He has personal charm, of the synthetic kind that appeals to a public conditioned by Hollywood and TV heroes; he works hard; and he does not conceal his ambition. No "Mr. Republican" — Nixon is not a diehard like

Bob Taft — he is "Mr. Smoothie," the All-American Boy.

These talents stood Nixon in good stead at the greatest crisis in his career, when in the 1952 campaign he had to face the charge that he had been receiving money from a secret fund raised by a group of wealthy Californians called Volunteers for Good Government. Eisenhower was furious at the disclosure — especially since he had hand-picked Nixon at Chicago as his running-mate and as they both were denouncing the corruption of the Truman Administration. There was talk that Nixon would be dropped from the ticket as he went on the radio and television circuits to defend himself. He rose to the occasion. As his wife sat beside him before the cameras, he defended himself as an honest man who had taken the money for such essential purposes as sending Christmas cards to his supporters — $4,237 in two years — or traveling expenses, instead of throwing the burden on the taxpayers. He lashed out at "the Communists and crooks" who were trying to smear him, accused Adlai Stevenson of having a similar secret fund, and laid bare what appeared to be an exact account of his whole financial history. He mixed self-pity, sentiment and confident denunciation of his opponents, using every cliche in the politician's handbook, and imitated Roosevelt ("they now attack my little dog, Fala") by stoutly defending the right of his children to keep a cocker spaniel which, oddly enough, was called Checks, sent as a gift by a supporter.

Though Nixon turned the secret fund to his own advantage, the source of the $18,000 collected in two years showed what kind of people backed him. The largest contributors were real-estate operators (he voted against public housing and rent controls), oil interests (he had voted to take control of tidelands oil away from the Federal Government), and wealthy men who liked his support for tax reductions and "free enterprise." Such groups had backed Nixon from the beginning, ever since he was first chosen in 1946 to run in California's 12th District against Congressman Jerry Voorhis. Nixon was the new kind of candidate that the Republicans needed: ambitious, amenable to business support, but not tarred by obvious association with the oil, fruit and real-estate interests, and willing to attack militant liberals with all the weapons in the anti-Communist arsenal. Voorhis was a Left-wing Democrat, but so anti-Communist that the California C.I.O., then Communist-dominated, refused to endorse him. This did not stop Nixon from smearing him; the slogan was "A vote for Nixon is a vote against the P.A.C. (Political Action Committee of the C.I.O.) and its Communist prinicples." The same formula was used four years later, only much more viciously, when Nixon ran for the Senate against Helen Gahagan Douglas, another progressive Democrat. Receiving substantial sums from the China Lobby and Californian business, Nixon won after one of the most unpleasant and unscrupulous campaigns of the year.

By this time, Nixon had made his name. He was the man who, in the eyes of America, had exposed Alger Hiss. As he looks back, he must rank that achievement with his television performance in 1952 as a turning point of his career. He had quickly made his mark as a junior member of the Un-American Activities Committee. He had attacked the Truman Administration for laxity in the Eisler case and the espionage hearings; he had helped in the sensational inquiry into Hollywood Communism. Now, uncertain at first whether or not Whittaker Chambers was lying, and feeling like his Committee colleagues that nothing could be gained by any further questioning of Hiss, he suddenly found in Chambers' testimony a "detail that gave me a flash of absolute conviction." Chambers had said that Hiss had once seen a rare bird, a Prothonotary Warbler, by the Chesapeake and Ohio Canal. When Hiss was asked—and he had no knowledge of what Chambers had said — if he had ever seen such a bird, he answered that he had, "by the C. & O. Canal." From that moment Nixon pursued Hiss relentlessly. Through much of the dramatic hearings it was Nixon who made all the running, right up to the dramatic moment, about six o'clock on the evening of August 17, 1948, when in a room of the Hotel Commodore in New York, Nixon confronted Hiss with Whittaker Chambers. Nixon had gotten his quarry, and the game was something bigger and more sensational than ever McCarthy has brought down with his clumsy blunderbuss. The suave young lawyer, the slick operator, had shown that "white-collar McCarthyism" was a better recipe for success than cruder demagogy.

When Nixon was picked to run with Eisenhower, he still managed to keep up a respectable appearance, though the content of his campaign speeches was almost as crude as McCarthy's. He attacked "Communists" and "crooks" in Washington, the seven years of Truman-Acheson rule which "lost six hundred million people to the Communists," let spies, perverts and security risks run free in government, and saddled the American people with "creeping socialism." By contrast, Eisenhower would get American boys out of Korea — "The Democrats' War" — and build prosperity on peace and honest government. With only slight variations, Nixon used the same themes when he took the stump for the Republicans last autumn.

He has played his cards cleverly. Though he has never become identified with the Republican diehards, he has avoided too close an identification with the party "liberals": he skillfully manages to look "progressive" and to behave as the tool of the most reactionary elements in U. S. business. He is "safe" on labour law, social security, public housing, taxes, oil, Communism, controls, and Chiang Kai-shek. He has been named as one of the leaders of the "preventive war" faction in the Administration. As a "trouble-shooter" — an ultra-Right Harry Hopkins — he has been used to do the hand-shaking, the smiling, the smearing and the intriguing which the Administration needs and the President will not do.

—New Statesman and Nation, London.

Political Americana

Uncle Sucker Sam

Labor, March 12 — Forcing U. S. taxpayers to pay Germany's debts is getting to be a common practice. The latest example came this week in a new pact signed at Washington by German and American government "delegates."

Under this pact, the United States agrees to "release" West Germany from its obligation to pay claims for damages to American-owned property during the Second World War. The U. S. government agrees to pay these claims from a $100 million fund received from Germany as part payment on loans from Uncle Sam since the war.

According to the United Press, "an American official declined to comment when he was asked whether this pact doesn't mean, in effect, that U. S. taxpayers will foot the bill for claims against Germany."

Under another pact, signed several years ago in London, England, American taxpayers are, in effect, more than paying off about $300 million old German bonds owned by citizens of the United States and other countries. It works this way:

Uncle Sam "released" West Germany from paying back about $2 billion postwar loans from the U. S. government. In return, the West German government agreed to pay the $300 million private bond debt. Thus the holders of the German bonds gain $300 million, and the U. S. taxpayers lose $2 billion.

Guilt by 'Gossip'

Washington, D. C. (U.P.) — Educator Robert M. Hutchins said recently that a timid fear of being branded pro-communist was causing many Americans to surrender one of their most precious rights —the right to "feel free."

In a speech to the National Press Club, he said a "formless fear of public opinion" had inhibited thought and expression at all levels of American life, and added "the battle cry of the republic is, 'What will people say?' "

Hutchins, now head of the Ford financed Fund for the Republic, said the "newer orthodoxy" had imposed "odd" rules on Americans.

"It requires us to be against McCarthy, but not too soon or too much," he said. "If we say that rumor and gossip are an inadequate basis on which to condemn a man or a group, we are told that of course we are right, but that in this case the rumor and gossip are so widely believed that people would think bad thoughts of us if we insisted on proof."

"It comes to this: We must ourselves adopt an un-American attitude because, if we don't, we may be regarded as un-American by those who have an admittedly un-American attitude." . . .

Is Speech Free?

Seattle, March 23 (AP) — The University of Washington announced today it has been forced to cancel an important scientific conference April 7-8 as a direct result of its ban against Dr. J. Robert Oppenheimer.

The university said seven of eight eastern scientists who were to have led the conference signed a round-robin letter refusing to appear because of the Oppenheimer incident.

Dr. Henry Schmitz, university president, recently barred Oppenheimer's appearance as a guest lecturer in the spring because of the atomic physicist's "Governmental relationships." Oppenheimer was denied access last year to atomic secrets on security grounds.

The conference, listed as a symposium on the molecular basis of enzyme action, had been expected to draw more than 200 scientists from all parts of the country, said Dr. Hans Neurath, head of the university medical school's department of biochemistry. . . .

Cultural Advancement

New York Post, March 30 — Japanese who lived through the hottest part of the atom bombing of Hiroshima have produced children who show no significant signs of hereditary ill effects after 10 years, say medical investigators.

Among offspring of 185 women who were pregnant and were in the area closest to ground zero only eight have shown signs of radiation injury, said Dr. Robert H. Holmes, director of the U. S. atomic bomb Casualty Commission.

. . . The affected youngsters have heads slightly smaller than average and are somewhat mentally retarded. But thus far there is no significant evidence that they or any of the youngsters have been damaged genetically, Dr. Holmes reported.

Adult survivors in the hot zone, an area of 2,000 meters radius directly beneath the bomb target center, developed 16 times as much leukemia, a cancer-like condition of the blood, as did unradiated Japanese, but even these added up to only 44 cases.

Eyes of radiated adults suffered more. Cateract-like spots have been found in 41 per cent of the 6,000 individuals in the bomb commission's study group, as against only 8 per cent in non-exposed Japanese. No cases of blindness have been found.

Some of the more heavily radiated adults became temporarily infertile, but regained their ability to produce children.

(*Shrunken heads, retarded mentality, dimmed vision! . . . It appears that atomic radiation can produce in short order what parochial indoctrination requires years to accomplish.*)

FORGIVE US OUR DEBTS

Editor's Note: Money is debt. Debt is purchasing-power. Purchasing-power is wealth. Wealth under a Price System is debt. Stocks, bonds, promissory notes, mortgages, trust deeds, etc. are a debt against society and must be paid in goods and services.

If goods and services are abundant, we must have purchasing-power (debt) in a 'somewhat' corresponding quantity or we cannot move (sell) our goods or services. When the disparity between production and purchasing-power becomes too great the economy breaks down and we have a recession, a depression, or a panic.

This is the dilemma of the Price System — how to maintain a semblance of balance between purchasing-power and production. Should production become greater than purchasing-power, then purchasing-power becomes worthless. Because our production is expanding at an ever accelerating rate it is necessary to constantly increase the purchasing-power — that is the reason we have the incredible situation of banks urging people to borrow money, due to the fear of a slackening in the speed of creating purchasing-power.

As man-hours per unit of production decreases, in like ratio wages and salaries decrease. It is then mandatory for people to borrow more and more to buy that which is produced, or inventories will mount at even a faster pace than now — then there would be a greater surplus for the Government to buy; and the increase in taxation would accelerate.

Thus, the merry-go-round is whirling ever-faster and faster toward the inevitable break-down of the Price System.

"Money (i.e., coin and currency of the realm) is no longer needed either in business or personally. Everything is now done on credit. It is even possible to go around the world on the installment plan — and this is not a figure of speech. Furthermore, a definite stigma attaches to the carrying of cash. It is an indication that you are either a shady character or too poor to be in debt.

"It is increasingly difficult to find a store where one can buy something — and simply pay for it. A research fellow once discovered that it is easier to sell twenty dollars' worth of merchandise on time, than ten dollars' worth for cash. As a result, merchants are no longer interested in cash customers. They have established every conceivable type of charge account: 60 days, 90 days, 6 months, budget accounts, revolving accounts, etc. Anything from a house to a safety pin can be purchased 'on the cuff.' You can arrange for deferred payments, partial payments, periodic payments, staggered payments, token payments, or earnest payments (forerunner of stop payments). They are all described as 'easy' payments. The latest gimmick, called an 'open-end mortgage'(!) provides for perpetual payments. If you pay off $1,000 at one end, it makes you eligible to borrow $1,000 at the other end. Obviously finance and mortgage companies do not care whether they ever get back their principal, so long as you keep paying interest. In fact, in a pinch they will lend you enough additional money to cover the interest.

"This is not as silly as it sounds. Nothing could be. We have simply broadened our horizons, economically speaking. Having demonstrated that debt is not a liability but an asset, we are in process of proving that borrowed money is actually income. We not only spend what we have, but what we have not. Since what we have not is limitless and infinite, it is obvious that spending on such a basis has no limitations."

—Herbert A. Leggett, Editor, "Arizona Progress," July, 1954 monthly bulletin of the Valley National Bank, Phoenix, Arizona.

Total Gross Debt in the United States, Public and Private.

1929—	$214,000,000,000
1930—	214,300,000,000
1931—	203,300,000,000
1932—	195,200,000,000
1933—	190,500,000,000
1934—	197,300,000,000
1935—	200,200,000,000
1936—	205,900,000,000
1937—	208,500,000,000
1938—	203,600,000,000
1939—	207,700,000,000
1940—	215,800,000,000
1941—	242,300,000,000
1942—	299,100,000,000
1943—	364,500,000,000
1944—	430,900,000,000
1945—	463,300,000,000
1946—	457,900,000,000
1947—	486,100,000,000
1948—	499,000,000,000
1949—	520,000,000,000
1950—	566,800,000,000
1951—	609,300,000,000
1952—	647,000,000,000
1953—	682,800,000,000

—U. S. Department of Commerce

(The foregoing is grand total of: Federal, State, and local government debts, corporation and company debt, and individual debts including consumer debt and mortgage debts.[1])

Thus the aggregate total of all debts in United States as of the first of 1954[2] was nearly $933 billion.

". . . this myth that the national (Federal) debt does not exist because 'we owe it to ourselves.' First of all, we don't owe it to ourselves. The debt is represented by Government Securities. The securities are held by a special group of Americans and foreign owners, some individuals, some institutional.[3] In the hands of these securities holders, the debt is a continuing claim on the flow of goods and services produced by the rest of us. Thus, while the claim on goods and services represented by the debt is held by a special group of people, it is all the rest of us who must meet the claim.

"Carrying charges (interest[4]) alone are about $12 per family per month (in 1946) and that does not include anything for paying it off — just for keeping the debt around without getting any bigger. If we ever do manage to pay off this debt or reduce it substantially without putting the American dollar through the wringer, or collapsing the whole economy, we should learn by experience that there is no such thing as a free lunch."

—'Telephony' magazine, Chicago, Dec. 21, 1946.

The Federal Reserve Board's 1954 survey of American consumer assets showed that 63 per cent of all families and single individuals possess no U. S. Government bonds.

The interest received by these and all 15,000 other banks in the United States and the insurance companies and other corporations and individual bond holders, from the U. S. Treasury each year (the $6.5 billion) is, of course, part of their profit and income. However, a neat little thought to add to this is that all these banks, insurance firms, corporations, families, et al, have to pay taxes — varying amounts, of course — each year to the U. S. Treasury, so their taxes are added to the taxes paid by the rest of us in making it possible for the Treasury to meet that $6.5 billion. But the bondholders have to give the Government part of what they get back! Round and round, what's the sense of it, some might ask. To those that are the *major* claim holders, such as the big banks, insurance firms, and wealthy individuals — it pays off handsomely. It's part of the game.

[1]In addition to the above, the U. S. Government is obligated for "an additional $250 billion of guarantees and indirect liabilities." —'The Federal Debt' by Charles Cortez Abbott, Prof. of Banking and Finance at Harvard Graduate School of Business Administration. Published 1953 by the Twentieth Century Fund, N. Y.

[2]Latest official figures.

[3]For example, on June 30, 1953, just 20 of these 'institutions' — fifteen banks and five insurance firms — between them held exactly $15 billion of the then total U. S. Government debt of 264 billion.

They are the Bank of America (nearly $1½ billion), National City, Chase National, Guaranty Trust, Manufacturers Trust, Continental Illinois, First National of Chicago, Bankers Trust, Security First National (Los Angeles), Chemical Bank & Trust, Mellon National Bank & Trust, First National of Boston, Corn Exchange Hanover Bank, Irving Trust, Northern Trust, and Aetna Life Insurance, Travelers, Metropolitan, New York and Equitable.

[4]The interest payable by the U. S. Treasury to the holders of all its bonds (which constitute the debt) adds up to about $6.5 billion per year, which must be added to the cost of government and therefore collected in taxes from the consumer public as a whole; this is where part of our taxes go — meeting the claim of the Treasury bond holders.

Veterans Roll 'Snake-Eyes'

The Oakland Tribune, March 15, (New York) —The Administration's easy-money policy encouraged the buying of new homes. But the mortgage debt for one-to-four family homes has gone over the $75,000,000,000 mark — nearly doubled since 1949. The official word is that tighter money controls are likely this summer.

The Census Bureau is now making a vacancy check. It will be completed in July. In view of the unhealthy mortgage situation, expect the Federal Reserve Board to use the survey as a basis to impose restrictive measures on such loans.

In the early postwar period the number of new family formations outran the rate of home building. Now the tables have turned. The rate has nosedived while new home building goes on at a blistering pace.

Some 2,000,000 new homes were built in the past two years. During that time only 1,400,000 new families were formed. Present building is at a 1,450,000 annual pace but the Bureau of Census predicts only 600,000 family formations. That spells out a 1955 excess of 800,000 homes. It could affect values in the entire real estate market.

Washington officials predict a tapering off of home building later in the year. But no slackening of the present pace is likely at least through June. The impending mortgage credit controls will account for the slower volume.

Generally speaking, Washington is learning that the no downpayment and 30-year mortgages have been a boon to builders, not to veterans. It is recognized that prices on new homes in many areas are inflated.

Bankruptcies Rising

Citizen-News, April 13, (Washington) (UP)—Bankruptcies during the year ahead are expected to surpass the record set during the depression year of 1932, the House Appropriations Committee reported.

It said the fiscal year starting July 1st is expected to bring "the highest number of bankruptcies recorded in the history of the country."

. . . The committee approved the full $2,801,400 requested for salaries and expenses of bankruptcy referees in view of the anticipated increase in bankruptcies. This was an increase of $172,375 over last year's appropriation.

Administrative officials of the U. S. courts had testified that 75,000 bankruptcy cases were expected in the next fiscal year compared with 65,000 in the current fiscal.

That compares with 53,136 in the fiscal year ending last June 30. The record high was 70,049 in fiscal 1932. Bankruptcies have been rising since 1946 when they had dropped to 10,196, lowest level since the turn of the century.

Is it any wonder the Price System apologists are getting jittery?

Pen Money

Albertan, (Victoria) (CP) — Attorney-General Lucien Maynard of Alberta told a Social Credit study group here that Canada's present banking system is nothing but "a fountain pen money system."

Mr. Maynard reviewed the development of banking. "Today the bulk of money in circulation is bank credit," he said. "Your chartered banks today operate a gigantic accounting system and it is nothing but a fountain pen system."

Expansion — For What

N. Y. Times, Nov. 21, 1954 — A year ago, manufacturers reported they planned to increase capital expenditures by 17 per cent. The increase however, turned out to be 12 per cent.

Manufacturers may ask, of course, 'why increase plant investment, when we can't sell the output that our factories can now turn out?' A look at the steel industry might suggest an answer.

That steel industry, now working at less than 80 per cent of capacity, is often said to have too great a potential for peacetime requirements. The fact remains, however, that almost 40 per cent of steel capacity is over-age or obsolete, and output from this segment must necessarily be higher in cost than production from newer installations.

One factor in determining the rate of consumption is price. A major field for cost saving lies in increased machine efficiency and, to achieve it, manufacturers must set aside use reserves for constant refurbishment and replacement.

The large industrial enterprises, such as General Motors and General Electric, are doing just this. Harlow H. Curtice, president of G. M., announced in January that the company would spend a billion dollars on its expansion program. Roger M. Kyers, vice-president, said last week that G. M.'s billion-dollar expansion program was 'going right along on schedule.' This is in addition to G. M.'s expansion program for its European plants, which will take another $182 million.

How expansion creates employment is shown by the program undertaken by General Electric in the ten years following World War II. By the end of this year G. E. will have spent well over a billion dollars. Employment has risen from 75,000 in 1940 to more than 220,000 in 1954.

What happens when the limit of tolerance of expansion is reached?

How Not To

"A popular topic of the day is 'How to Prevent a Recession.' Many theories are advanced, some ingenious, some fantastic. Ours hasn't jelled yet but we think we know what not to do. The views expressed are not necessarily those of our sponsors, business associates, or any political party. We hasten to add, in all fairness, that these views are *not necessarily* those of our sponsors, business associates, or any etceteras.

"Now that the excess profits tax has gone the way of all flesh, businessmen are again looking for ways to cut expenses. They are busily salvaging paper clips and scrutinizing swindle sheets. They are even clamping down on the coffee hour (and we do mean hour). This is extremely short sighted. It is not only bad for morale but undermines the very foundation stones of prosperity. Make no mistake about it. Irresponsible economizing could wreck everything.

"Prosperity is based to a large extent on waste, inefficiency, and doing the unnecessary. Windows are a classic example of poor economy but good economics. They are expensive to install. We then cover them with venetian blinds and drapes . . . making continuous work for window-washers, venetian blind dusters, and dry cleaners.

"It is bad business, however, if we produce things that last too long, or function too well. Durability? Bah! Efficiency? Bah! Frugality? A thousand times bah! Let us nip such nonsense in the bud. Let us resist to our last dollar these niggardly impulses. To keep the economic machine perpetually in high we must eschew and discredit once and for all the insidious doctrines of B. Franklin!"

—From editorial on front page of "Arizona Progress," April, 1954, monthly bulletin of the Valley National Bank, Phoenix, Arizona. Herbert A. Leggett, editor.

Potentialities of Automation

Reprinted by special permission of the Brotherhood of Maintenance of Way Employes Journal.

A new industrial revolution is under way in America. Its name is "automation." It has tremendous potentialities for good and evil.

Automation is a new word. It was coined by engineers of the Ford Motor Company. It means something more than the introduction of new or improved machines.

Railmen have been experiencing mechanization in nearly every craft for many years. In many cases it has meant easier, safer work, but look what it has done to jobs: In the period of 1921-25, to move an average of 372 billion revenue ton-miles of freight per year, the nation's Class I carriers employed an average of 1,728,000 people. In 1953, to move 606 billion ton-miles of freight, Class I carriers required only 1,206,000 people. Thirty per cent fewer workers moved 60 per cent more freight.

Now a start has been made on this further new technique called automation. One example on the rails is in automatic traffic control. One industry after another, in fact, is pushing toward automation, and in every case the workers are vitally affected.

The essence of automation is this: Electronic controls run the machines, replacing human brains and hands. In the first industrial revolution, beginning in the 18th century, machines replaced hand tools. Mechanical power replaced human or animal power. The locomotive and the gasoline engine took over from the horse-drawn cart or carriage; but always a human mind and human hands ran the machines.

In automation, the electronic brain takes over. It runs the machines. The human element is pushed back a huge step further — limited to a handful of engineers or technicians watching a panel of electrical indicators. That's why automation is called a new industrial revolution. Here are some examples:

*A Ford engine plant near Cleveland uses automation to control the machining of engine blocks "without the touch of a human hand." Forty-one machinists — with automation — do the former work of 117, and in one-third less time.

*Another setup for automobile engines, as advertised by its manufacturer, performs 555 different operations with only one man at the controls. Altogether, in 1954 alone, the auto companies spent hundreds of millions of dollars bringing automation to their plants.

*Radios are assembled at the rate of 1,000 a day in Raytheon Manufacturing Corporation's Chicago plant with only two men at the controls, instead of 200 formerly needed.

*The Army has built a completely automatic TNT Factory at Joliet, Ill. Manufacture of rifle grenades, in another plant, is performed by nine robot machines operated by nine men, as against the 27 skilled machinists formerly required.

*Westinghouse Electric has a new refrigerator and freezer plant where component parts travel over 27 miles of conveyors, through automatic enamelling and assembling devices — and in the end go to an automatic crating machine. General Electric is building a similar plant. A company making steel pipe, the Milwaukee Journal reports, has a "completely automatic operation," in which "steel enters a rolling mill in the form of billets, is converted to sheet steel of specified thickness, and in a continuous process line then is formed, butt welded, cut to length and threaded to emerge as finished pipe.

This 22-million-volt Betatron sees through steel sections from 2 to 20 inches thick at production-line speeds, revealing flaws and checking alignment of parts.

Photo — Courtesy Allis-Chalmers

This Dow hot chamber machine can be set to run automatically so that ingot charged at one end can be taken away as die castings at the other.

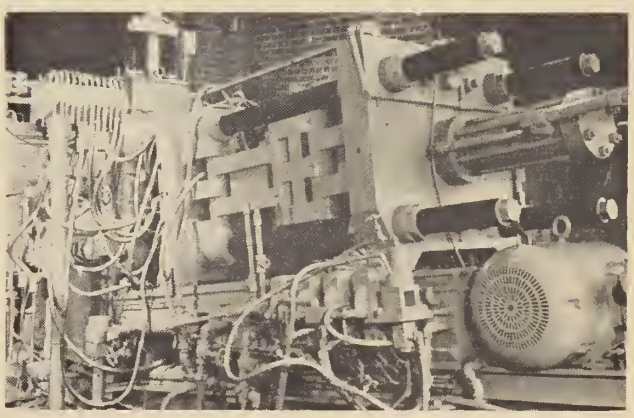
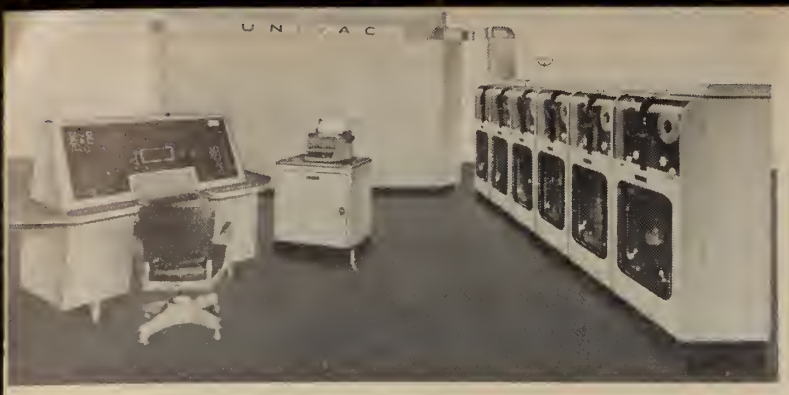


Photo — Courtesy Dow Chemical Co.



Univac has made yesterday's dream of automatic office procedures become an accomplished fact today. Photo — Courtesy Remington Rand

*Automation has gone particularly far in the telephone industry. There, the number of telephones handled per employee has nearly doubled in 30 years. Now, according to Fortune magazine, the phone company is "ready to set up inter-region and even coast-to-coast dialing, with automatic accounting and billing machines replacing operators on tabulations."

*Oil refining is another almost completely automatic industry. "A few skilled workers," as Time magazine puts it, "sit at a master-control panel and guide the crude oil through many intricate steps to high-octane gasoline or any one of a dozen other major petroleum products."

*In the aircraft industry also, the Wall Street Journal reports, "automation is playing an outstanding role." One big firm has automatized the cutting of plane wing panels, eliminating "literally hundreds of separate tasks." The whole job is controlled by "an electronic mechanism that resembles a telephone system and enables the operator to 'dial' his specifications." Another example is "an electronic, push-button device that cuts, stamps and measures electric wire all at once, eliminating five time-consuming manual tasks."

*Even in the phonograph record industry 16 new machines, operated by four dial-watching men, turn out five times as many records as 250 men would normally produce. Even more extraordinary, the Carbide and Carbon Chemical Company claims to have in operation the "world's first robot coal miner," turning bituminous coal into gases underground.

*In "white collar" clerical operation also, automation is proceeding at a fast pace. One firm cut its clerical staff 39 per cent, while boosting volume of work handled.

According to the New York Journal of Commerce, "automation in the field of retailing has developed so rapidly that it has become a larger factor in distribution than even the retail trade itself generally realizes. Major retailers are utilizing electronic computers to reduce costs and operate more efficiently.

"These computers," the Journal of Commerce continued, "are currently finding their greatest use in simplifying procedures of stock control, payroll, billing, inventory, forecasting and general accounting." In one case, "where it once took 60 tally clerks to supply week-old statistics on sales, now 10 operators provide daily reports." The implications are obvious for all workers engaged in clerical work.

Will this new industrial revolution of automation prove a good or bad thing? Union leaders, in the auto industry and elsewhere, are increasingly concerned about the effect of automation in throwing people out of jobs. An anecdote illustrates the point.

An auto company official was showing Walter Reuther, Auto Workers' chief, through the firm's new automatic factory. Pointing to the long line of electronically-controlled machines, the official asked Reuther: "How are you going to collect union dues from these guys?" Retorted Reuther: "How are you going to get them to buy your cars?"

Boosters of automation among top management make light of these fears about employment. "Automation will do just the opposite," Del S. Harder, vice-president of the Ford Motor Company, recently claimed. "It will create more jobs — create more products at less cost — and increase the ability of people to consume," he asserted. "It is the key to less human effort in the future and an increase in our standard of living of tomorrow."

Potentially, there's no doubt Harder is right. Automation can lighten tremendously the burden of the world's work. It can prove an outstanding boon

Operator starting the casting cycle of Dow hot chamber machine by pressing control button.

Photo — Courtesy Dow Chemical Co.

to mankind, but what happens to the workers who lose their jobs to the new electronic-controlled machines?

Will they be dumped on the street? Or will they find new jobs, through the shortening of hours and boosting of pay for those who remain employed, thus expanding purchasing power and creating higher sales and new job opportunities elsewhere?

Professor Norbert Wiener of the Massachusetts Institute of Technology, who laid the theoretical foundation for much of the automation revolution, has issued a grave warning of what might happen. "We have a good deal of experience," he noted, "as to how the industrialists regard a new industrial potential.

"Their whole propaganda," Wiener continued, "is to the effect that it must be left open to whatever entrepreneurs wish to invest money in it. We also know that they have few inhibitions when it comes to taking all the profit out of an industry that there is to be taken, and then letting the public pick up the pieces . . . "

Will the public have to "pick up the pieces" of the automation revolution? Or will the nation's employers cooperate with their employees to cushion the impact and fairly share the gains? The answer will make a big difference to every one of us.

—Michael Marsh

No Button Pushers Needed

Long Beach Independent, March 28, San Diego, (AP) — The aircraft industry's first electronically controlled machine — expected to save as much as 85 per cent of time now spent on some parts — will be developed by Convair Division of General Dynamics Corp.

Capable of producing aircraft dies or parts of any shape within the curves embodied in today's airplanes, the 200-ton milling machine and the electronic system that directs it will be completed in about 18 months, Convair Pres. J. T. NcNarney said recently.

. . . McNarney said the machine would be guided by a magnetic tape running through an electronic director. A computer will translate engineering data into numerical commands on the tape, McNarney explained. He said the commands will guide the machine's four cutting heads, its bed and turntable.

He said the electronic control system will be based on development work conducted at Massachusetts Institute of Technology, under Air Force auspices.

Thomas E. Piper, assistant to the executive vice-president, said electronic direction represents a radical departure from present-day methods of producing complex aircraft structures or dies. . . .

The Futile Furore of the Price System

After the furore and futility of every election campaign is over, it will dawn on the American public that they have again been played for suckers — by the reactionaries, liberals, and radicals alike — because the physical problems of this country and this Continent remain with us, continuing to mount unabated, unnoticed (in the newspapers, over the radio, and on the television), and unsolved.

These problems, which stem from the Price System's interference and enforced scarcity, include: poverty, toil, disease, man-made drouth (and floods, smog, pollution), accidents, crime, and resource wastage.

Zillions of dollars, millions of votes for politicos of any label or ilk, cannot solve the mounting social and technological problems of the North American Continent, so business and its political government are falling back on their last "out" — beating the propaganda drums of international fear, tension, and hysteria.

Even if they should try, instead, to face only domestic problems — only one of which is unemployment — and a very unlikely 'miracle' that would be, the Price System is still on its way out, mechanizing away its very source of purchasing power.

The only method which can solve these problems created by the Price System's complete incompetence, is the sanity of science — physical science which, with technology and engineering, built the North American Power Age for us to live out our lives more securely, more abundantly.

An event of far greater social significance to Americans than all the ideologies and "x" marks (of illiteracy as well as voting!), occurred when technologists and engineers installed the 100,000,000th kilowatt of electric utility generating capacity in the United States!

The six "Jumbo" steam engines powering the dynamos in Thomas Edison's first central electric station, in 1882, had a combined total capacity of 560 kilowatts. By the end of 1945, or 63 years later, our central electric stations had been built up to an aggregate capacity of 50,000,000 kw. Now, only nine years later, we have doubled that capacity! Today we are building steam turbogenerators of as much as 275,000 kw. each!

Electric energy is leading the march of power. The kilowatt-hour is rapidly displacing the man-hour. It's about time. . . . Technological abundance can be achieved only by more technology, not human toil. But where this dooms the Price System in America is the fact that a kilowatt-hour can be purchased by industry for less than 1 cent, compared to a man-hour that costs at least 75 times as much and at best does only 1/26th as much work. The kilowatt-hour is bringing about the greatest social change in human history.

The RESEARCH BULLETIN

NEWS ITEMS OF SIGNIFICANCE QUOTED FROM THE NATION'S PRESS

Pineapples In Deep Freeze

Honolulu Star-Bulletin, March 21 — Hawaii's pineapple industry ended its last year with close to 11,000,000 cases of pineapple products canned but unsold.

Sales of pineapple have not kept up with production and increased production without increased sales would "only mean increased stocks of unsold pineapple and trouble ahead."

These are two of the many facts published recently by the Pineapple Companies of Hawaii in a new 21-page booklet appropriately labeled, Basic Facts About Pineapple in Hawaii.

Covering the industry from its early history to a final page on Facts for the Future, the booklet makes this point on the future of the industry:

"Maintaining or increasing production . . . depends upon increasing efficiency and decreasing costs to meet the price competition in today's canned fruit market.

The book shows that the industry already is spending, through the Pineapple Growers Association alone, more than $1,000,000 a year for sales promotion and, through the Pineapple Research Institute, more than $1,000,000 a year on agriculture research.

But it shows the trend has been toward ever narrowing profit margins through increasing production costs and price competition.

. . . Before the war Hawaii supplied 95 per cent of the world demand for pineapple; today this has been cut to about 75 per cent by competition from other parts of the world. . . .

'Automate' — Or 'Else'

Los Angeles Times, April 4 — Automation soon will affect every American business, large or small, whether it automates or not, Leo Cherne, executive director, Research Institute of America, said here yesterday.

Cherne told Los Angeles Town Hall at a luncheon at the Biltmore that the enthusiasm of business for automation poses a threat that business will embrace it without being prepared to handle its revolutionary consequences.

Cherne said he sees a revolution coming, not only in production techniques, but in products, prices, labor production schedules, merchandising, payroll and personnel policies.

He advised business to look at the pitfalls as well as the advantages of automation and to forejudge its effects on every aspect of business operation.

. . . Cherne pointed out that automation is more than merely increased mechanization. The key to it, he said, is the idea of automatic control, of machines that adjust themselves for changes, that tell other machines what to do next. . . .

New Press Fills Bill

Milwaukee Journal — A giant new extrusion press to produce larger than ever parts for the aircraft industry was unveiled here at the Nordberg Manufacturing Co.

The machine, made for the air force's "heavy press" program, is claimed to be the largest extrusion press of its kind ever built in this country.

The machine weighs 2,000 tons and is 174 feet long, 18 feet high and 18 feet wide.

It can turn out extruded parts up to 100 feet in length and 32 inches wide for flat shapes or 19 inches in outside diameter for round shapes, either solid or hollow.

Approximately 8,000 tons of hydraulic pressure will be used by this press to force the metal through the die. The billets used will weigh 1,000 pounds each.

It is claimed that the press is the first to be designed for production of extruded parts from four different metals — aluminum, steel, titanium or magnesium.

It also is the first press of its size to be designed for using either flat or round billets. The shape of the part to be extruded determines the shape of the billet to be used.

. . . The new presses are expected to supply the production answer for jet aircraft designers, who have long wanted to use larger one-piece extruded and forged shapes that are stronger but lighter than the composite ones involving riveting, welding and bolting that are now being used.

'Horace Greeley' Advice

Stockholm (AP)—Dr. Max Born, co-winner of the 1954 Nobel Prize for physics, advises young scientists not to become nuclear physicists. "Politicians just make nonsense of it (nuclear physics)," the 73-year-old scientist said on his arrival here recently to receive his half of the $35,000 prize.

And Now the Lowly Hen

The Fresno Bee, Fresno, Calif., March 13—The automation has invaded the egg-laying industry, and it is enough to make any self respecting hen start clucking to herself.

This machine can process the average hen's lifetime output of from 500 to 600 eggs within two minutes. The monster of modern ingenuity sizes, sorts, counts, sprays and packages the eggs.

The actual handling capacity of the machine, built by the packing equipment division of the Food Machinery and Chemical Corporation, is 270 eggs a minute.

Attendants manually feed eggs into the machine according to size. The automation then weighs each egg and assigns it to one of six weight categories, from jumbo to peewee.

After that, a built in 'memory' receives signals from the weighing station and sorting racks and automatically 'knows' the quality, grade and weight of each egg on the conveyor belt at any given moment.

The memory controls the point where seven jets spray the eggs with a protective coating, provides data for the inventory and printing counters, and controls delivery of the eggs at the proper packaging station.

At the end of the belt is the packaging area with 12 stations for loading trays and six for dozen size cartons. The memory determines which station receives which egg.

Two of these machines have been installed at the Modesto, California, plant of the Poultry Producers of Central California.

Propaganda Backfires

Long Island Press, March 20 — Because it offered "a more reasonable proposition," Russia has just beaten out the United States in a fight for a large Norwegian grain order.

Norway has finally decided to take 70,000 tons of wheat and 10,000 tons of rye from the Soviet Union because the Russians were willing to trade grain for Norwegian salt herring and fish oil.

Earlier plans to obtain the grain from the United States, which has a billion bushel wheat surplus, were dropped for two reasons:

The United States asked for payment in aluminum and other strategic products which Norway can easily sell for cash.

The United States also insisted that 50 per cent of the grain should be transported in American bottoms.

As owner of one of the world's largest merchant shipping fleets, Norway insists upon the principle of free competition in bidding for cargoes.

(*Russia exports wheat! And our propagandists tell us that the poor Russian people are starving for lack of wheat. Never has the public of a great nation been more misinformed about world affairs than the public of the U.S.A.*)

Surplus Goes 'Sourplus'

Riverside Enterprise, Washington (AP) —Officials at a covey of little schools scattered through 320 square miles of Ozark hills wrote Sen. Stuart Symington, Missouri, in distress.

They had thought they were to get electric light, but now it appeared their plans were stalled.

Power was available; the schools were hoping to get the fixtures through the Federal Government's school and hospital donation program, from Federal surplus goods.

They would have had to pay only for hauling the fixtures — which they couldn't afford to buy — from some military depot.

However, they found the fixtures were not free any more. They had to buy them, like anyone else.

"What's happened?" Ozark people asked.

It was this:

Two separate congressional programs concern surplus material. In some respects, one acted against the other — creating a snarl that has brought more than 30,000 letters of complaint in recent weeks.

In 1948, Congress said all surplus goods held by Government agencies — from tack hammers to desks and from hotel-size refrigerators to obsolete planes —should be processed for use or sale. A department which had stuff it didn't need notified other Government agencies. They could take what they wanted. What was left was surplus, available to schools and hospitals. What was still left would be sold as junk.

But Congress also ordered the Defense Department—which this year is spending $35,000,000—to adopt a revision of its buying program. And 90 per cent of the surplus goods was held by Defense agencies.

These changes put military supply agencies under the same sort of business-like operation that governs department stores. Books must be kept to show the value of everything on hand. Accounts must show how each item is used, and the price when an item is sold.

Now the Defense Department issued "Regulation 7420.1," which became the center of the battle between the schools and the military. This regulation states that all supply depots must be paid for goods leaving their warehouses.

That just about dried up the donation program to schools and hospitals.

What! — No Harness Page?

Milwaukee Journal, Jan. 21 — The Montgomery Ward & Co. farm book, for the first time in more than 70 years of publication, omits work harness for farm horses from the list of items in the new catalog out Tuesday.

A company spokesman said that demand for work harness had dwindled to such an extent that it was no longer profitable to carry it.

However, though the horse may have all but disappeared as a draft animal, it is growing more popular for pleasure riding. As a result there is a wider assortment of saddles listed.

Doctor Diagnoses Price System Maladjustments

Los Angeles Times, May 5 — Dr. Ira B. Cross, who taught economics at the University of California in Berkeley for 37 years, gave his views, yesterday, on the current economic situation.

. . . Dr. Cross warned that although the immediate business outlook is good, there are several spots that bear watching in the latter half of this year. He listed these as automobile and steel production, the stock market, agriculture and foreign trade.

Steel mills are running over 95 per cent capacity, he said, and the auto makers are producing cars at an 8,500,000-a-year clip, more than 2,500,000 over the previous record year. At the same time, he said, automobile dealers are rapidly becoming overstocked.

He said it was his belief the automobile manufacturers are producing at such a rate in the belief there will be a prolonged strike in the industry over the guaranteed annual wage, soon to be the subject of negotiations between the CIO United Auto Workers and the Ford Motor Co. He said if such a strike occurs, it will throw hundreds of thousands of people out of work and have a profound effect on the economy.

The construction industry bears watching, he said, because at present homes are being built at a far faster rate than families are being created.

The stock market is an unknown proposition at this time, said Dr. Cross, with no one knowing where it's going. But even if it should crash, he said, it doesn't mean a depression will follow.

"I wouldn't worry about a stock market crash," he said. "Unless, of course, you own stock."

The tremendous buildup of agricultural surpluses is creating a heavy burden on the taxpayers, with the cost of storing the billions of dollars worth of cotton, wheat, corn, tobacco, butter and cheese now held by the government running to $700,000 a day, he said. And Administration farm experts predict the cost will be $1,000,000 a day by this summer, he added.

"We should ask ourselves whether we want to continue to support almost any farmer," he said, "or whether we should cut supports and let the efficient farmers survive."

Dr. Cross said that more than one-third of the farms in the country are no longer needed to meet the country's needs, due to increased production through mechanization. He said 50 per cent of all support money paid by the government is received by only 9 per cent of the farmers.

Finally, he warned that a continuing decline in exports by America would shut down more foreign markets and make the elimination of surpluses abroad even more difficult.

"If we don't buy from abroad, we can't sell," he said.

Dr. Cross, who retired in 1951 as Flood Professor of Economics, Emeritus, closed his address with an appeal to Americans to get rid of outworn concepts that have ruled the country's political and economic thoughts.

"Question everything," he said. "Keep the word 'Why?' constantly before you. Why hold on to ideas that can't be questioned?"

Making progress the technological way — calls for 'round-the-clock operations and the use of the latest equipment, as illustrated in the building of the Garrison Dam. Photo — Courtesy Amer. Hoist & Derrick Co.

End of the Line

While 'plagued with abundance,' this Continent has been presented with its greatest opportunity. Instead of using a method of operation to distribute this abundance to every North American, the 'VIPs' (very important persons) have been, and still are, doing everything possible to prolong a system of scarcity. There was a time when it was possible to use various expediencies as a means to maintain the values of scarcity and to delay decisive action. But the days of procrastinators and their expediencies are numbered.

There are many domestic problems which show that we can not approach our social and economic affairs in the same manner as in the past. These conditions have reached the magnitude where immediate and long-term planning becomes necessary to prevent recurrence.

One of the most serious problems facing the Price System is what to do with the abundance of goods being produced on the farms. The ever mounting 'surplus' commodities are creating complexities for the nation in general. No matter what is done to reduce farm 'surpluses,' farm production and 'surplus' commodities continue to increase at a high rate. Even with the curtailment of growing crops and government bribes in the form of price supports, agricultural production continues to pile up. (It is estimated the government's investment in farm surpluses will reach $8 billion by this spring.) The dumping and selling of surpluses abroad at bargain prices has had no appreciable effect on surplus commodities held by the government.

The Department of Agriculture under the 'new' administration did make an attempt to unload the government's mountainous stocks of dried milk at cut-rate prices for livestock feed. But the 'whey producers' figured this was an invasion into their racket since whey is also fed to the animal population. And what did the department, which had inherited an abundance, do to solve this problem? Why, they told the 'whey producers' that they could sell whey to the government! (Abundance is not all the elephant inherited from the jackass.) And the government is 'plagued' with dumping or unloading the whey as well as the dried milk. It makes no difference what is done under a Price System, our problems become worse and more complex.

Another pressing problem is the ever increasing unemployment in the nation. While the figures released on unemployment and the method used to compute employment and unemployment are purposely erroneous, they do contain bits of information which point out the seriousness of the situation. Last year 6,600,000 individuals received unemployment checks amounting to about $2 billion disbursed to jobless workers during the year. If the figures of somewhat over 3 million workers unemployed are accurate, and we doubt it, then we can only assume that a greater number of jobless workers receiving unemployment compensation were absorbed back into the labor market or were just 'between jobs' of a seasonal nature.

The Bureau of Labor Statistics has released information which shows a steady decline in employment in many industries throughout the nation. For the past fifteen years there has been a steady decline in soft and hard coal, railroad, textile, farm machinery, glass, pottery, lead and zinc mining industries, resulting in the lay-off of over one million workers. Even with a reduction of man-hours in the workweek, there have been cut-backs and a reduction in the labor force among other industries. And in many industries the installation of more automatic machinery has increased productivity to the point where the market is saturated and the inventory situation has become intolerable. No matter what the government has done or is going to do about the problem, the decline of purchasing power resulting from disemployment will have a profound repercussion upon the structure of the present economy.

War Solves Nothing

It will take more than a Formosa-War, NATO, SEATO, Western German rearmament, the H-bomb, the A-bomb, air-bases around the globe, and the 'Voice of America' to stimulate the Price System. It must be evident by now that World War II did not really solve any of our domestic problems. Why should we think that another war would be the answer to our internal affairs?

Another pressure point is the rapid growth of population in the United States. According to Dr. Robert C. Cook, the current rate of increase in population would mean 225 million Americans by 1975 as compared with 163 million now. While there may be those people who, because of their interests, state there is no cause for alarm in this 'land of plenty,' they do not realize that feeding a nation of 225 million is just one of the many functions in operating a high-energy civilization which exists on the North American Continent. As the load upon the social mechanism is increased, the greater is the drain on our natural and irreplaceable resources. The fact that the Price System can not distribute today's production to the present number of Americans makes it obvious that the problem will be worse with a much greater population in the future. Unless we take scientific measures to bring about a balance between the rate of population growth and

the available resources, along with the energy conversion necessary to maintain and to operate a high-energy mechanism, our social problems will be more than 'little ones.'

A recent article in the Wall Street Journal makes it plain that the finances of most States have reached a critical stage. For the States as a whole, general expenditures are exceeding general revenues. The local governments are in the same predicament as the States. And from all indications the red-ink trend will continue, only at a much higher rate.

One of the most serious social and financial problems facing the States and local governments is the need for schools. The current shortage of classrooms at primary and secondary levels is more than 350,000, and mounting daily. There were 4,060,000 babies born the past year, a new high and an increase of 90,000 over 1953; the high expenditures of education will be with us for some time to come. The backlog in school construction is estimated at $10 to $12 billion; with a needed increase in expenditures of about $4 billion a year for the next five years to make even an inroad upon these deficiencies and take care of new needs. The States and local governments are already spending $10 billion a year on education; and the recent proposals by the federal administrators hardly touch the surface of the nation's needs in the field of education.

Taxes Go 'Nike'

According to the conservative U. S. News and World Report magazine, since World War II sales taxes, excises, and license fees have gone up 71 per cent; income taxes are up 84 per cent; and property taxes have jumped up 105 per cent. During the past nine years, State and local taxes have more than doubled to a total of $23 billion. Instead of getting a tax cut last year, the American taxpayers paid out a total of $90.551 billion to the governments during fiscal 1954, rising from $89.968 in fiscal 1953.

By present standards, the Housing and Home Finance Agency estimates there are 20 million dwellings in this country which need to be replaced or made livable. (Calling Pearl Mesta: this is America, not Russia!) Just to do this job would cost $24 billion of Federal, State, and local government money, plus three times that amount from private sources.

In every community of the nation there is an immediate need for new schools, new streets and repairs, water systems, sewer and sewage disposal systems, slum clearance and decent housing, hospitals and health facilities, improved transportation systems, or welfare needs. These intolerable conditions did not happen over night; they have been with us for some time. But nothing can or will be done to eradicate the filth and the stench unless we eliminate that system which breeds these conditions. The internal pressure of events is making it mandatory (whether we like it or not) to do something about the situation.

If 'automation' does not get you, taxation will. If your representatives can't get you a $20 cut in income taxes, what fat chance have you ever to receive a tax cut? While the 'poor' politicians find it rather easy to increase their own salaries, they have the nerve to state in effect that "everybody wants services, but nobody wants to pay taxes." Consider that the American people paid out about $90 billion in taxes last year of a total income of $286.5 billion which does not represent mere peanuts. With the American consumer paying on the average about 31 percent of his income on taxes, 25 cents of every dollar for food, and approximately 25 percent for housing and utilities, this does not leave much money for the 'pursuit of happiness' and the better things in life, does it?

Prime Cause of Traffic-Jams

It will take more than words and an expediency to solve the traffic congestion on the nation's highways. The importance of the automobile in every day life under the present system can not be overemphasized. Some 35 million families now operate at least one car per family. Most of them arrive at their destinations almost exclusively by car. It is estimated that two-thirds of all workers living one mile from their jobs use automobiles to make the trip each day. More than three-fourths of all those living five miles or more from their work, depend on passenger cars to commute to and from the job. Registrations of cars, trucks, and busses for 1954 amounted to over 56 million, which is an increase of more than 3 million over 1953. At this rate of increase there will be in ten years about 85 million conveyances on the highway of the nation — if there is sufficient road space and enough petroleum to take care of them.

Over the past 50 years 1,000,000 Americans have been killed in traffic 'accidents.' Political edicts have accomplished nothing in the way of preventing this massacre. While it would be simple to install a fast-moving, safe, efficient highway and transportation system, it is not done that way under a system where profit and political expediency take precedence.

Under the present scheme of things there are too many miles of what are called roads. The utilization of over 5 billion horsepower capacity of prime movers as a means to convey passengers and freight at the present load factor constitutes an extravagant waste of our basic non-replaceable resources. In brief, the highway and transportation system of the nation is now inadequate and highly inefficient. The proposed $101 billion highway program to be stretched out over the next ten years, whether done by 'bookkeeping with mirrors' or not, will fall short of meeting the need for new roads and rebuilding worn-out surfaces. As a matter of fact, any program which does not include the designing of the whole social mechanism along scientific lines in this machine age, would only add to the obsolescence of the present highway and transportation system.

The rapid growth in consumer credit now presents a dangerous area in the economy. At this writing, consumer credit (which covers installment buying, charge accounts, and personal loans) is heading toward a record high of $30 billion. Most business men and economists are claiming the present level of consumer credit is a good sign and nothing to worry about. The recent upswing of buying is attributed to a greater feeling of 'confidence' among the general public, and the spread of easier terms for buying goods "on the cuff." But it is never mentioned that installment buying at a high rate has become necessary in order to prop up a tottering Price System. Nor is it mentioned that the huge inventories held by business establishments might have something to do with the purchasing of goods and services on easier terms.

A greater number of the business executives also seem to think that installment buying could go to a higher level without having much effect on the stability of business in general. Arno Johnson, vice-president and director of research of the J. Walter Thompson Co., feels consumer credit could expand to $43 billion, and still not be out of line with national discretionary spending power (he defines discretionary spending power as 'surplus' spending power over and above what would be needed to provide a 1940 per capita standard of living for such necessities as food, shelter, and clothing at present prices). As to discretionary spending power, what income group has it? Certainly the bulk of American consumers don't have it. If the consumers are in a better financial position than in 1940, why is it necessary for them to go into debt at all? Let us face the fact that the bulk of American consumers don't have any liquid assets. The business men of the nation are going to find out soon that they can't get 'blood out of a turnip' and that they can't pay off their debts with confidence.

A. W. Zelomek, chief of the International Statistical Bureau, is another one of the 'pep boys' who agrees that consumer debt is not out of line on the basis of various indicators. As a point, he states that 50 per cent of the debt is charged to individuals with salaries of more than $5,000 a year and he adds that these individuals generally can handle it. But, there is a difference between the amount of the debt charged to these individuals and the number of persons in this salary group as compared with the number of individuals earning less than $5,000 a year. The trend of 50 per cent of the debt being charged to individuals with salaries of more than $5,000 a year does not necessarily mean they can handle it, but that on their present salary they can't live the life to which they have been accustomed. Because of the loss from the devaluation of the dollar and the increase in taxes, "any married couple with two children whose gross income was $3000 in 1939, would have to earn $6,063 in 1954 to maintain an equal purchasing power."

In this nation there are over 76 million persons who are directly depending on the government for subsistance. The welfare state reaches every segment of American life. It's a sorry nation that has 'inherited' an abundance and doesn't know how to distribute this plethora of goods and services to its people.

The politician can only make promises and spend our money from increased taxes; the business man can only expound 'free enterprise' while he squanders our resources and American heritage for the sake of profits; the ecclesiastics can only promise the 'good life' in the hereafter; but only Technocracy can offer a plan or social design which is in accord with our technological progress — the production and the distribution of an abundance to every North American.

The internal problems of the nation have reached the point where we must have function, not palliatives and expediencies. Our war is on the North American Continent, not in Asia nor Europe. The impact of technology upon the social order spells out the end of the line for the Price System. The immediate application of science to the social operations of the Continent is the only sane solution to our internal problems. This is no time to procrastinate. Prepare to institute Technocracy now!

—Clyde Wilson, 11833-2

Planes, April 26 — The speed and performance of fighters and bombers produced by the United States aircraft industry are so great that their pilots can't keep up with themselves.

So, to help them out, the aircraft electronics industry has developed an electronic brain, which will fly "co-pilot" in new supersonic fighter planes. It is a real genius when it comes to solving pilot's flight problems. It can do 60,000 additions or subtractions, or 3,000 multiplications or divisions in one second. . .

Washington, Oct. 15 — The United States Air Force has ordered initial production of the Convair B-68 medium bomber, designed to fly faster than the speed of sound.

Wall Street Journal, Feb. 23 — While you weren't looking, almost two million American farmers have been quietly dropping out of sight. In 1940, there were 8,833,324 farmers. Today, at latest report, only 6,837,652. Where did they go? And who's been feeding our growing population in the meantime?

Farm help of a different sort has taken their place. Tractors that save two billion man-hours a year. Mechanical pickers that do the work of 40 men. Grain combines that cut labor 85 per cent. Millions of machines that help today's fewer farmers produce 40 per cent more crops, feed 17 million more Americans.

Today's farmer is the most mechanized in the world. And his tremendous output depends upon the trouble-free operation of his machines.

LOOKING AHEAD

Bellamy's 'beautiful dream' is already outmoded; we are now living in an era that far outdates his anticipations. All we need do is dispose of political interference and operate an economy of abundance.

When Edward Bellamy wrote the books 'Looking Backward' and 'Equality,' back in the 1880's and 1890's, what he wrote concerning America's social and economic order of the 20th Century sounded at that time like a Utopian day dream — or wishful guessing. People said . . . 'a beautiful dream, but of course the things he wrote of can never come into existence.'

But today, America has all the scientific inventions (and how) that Mr. Bellamy wrote of, even to the process for teaching school by the 'electroscope' (television).

We have now in use about everything that Mr. Bellamy wrote of except the abundant money-less distribution system which he described. Instead of money, his medium of distribution was a non-transferable certificate, or 'voucher' issued annually to each individual, and based upon the national production of the previous year.

America's productive capacity is even greater today than Mr. Bellamy foresaw, and is constantly increasing.

Through the use of technology, industry is able to produce more and yet more goods and services with less and less human labor; the more we can produce the less work there is to be done by human hands, paradoxical though this may seem. About 98 per cent of our work of production is now done by machines and extraneous energy. It is quite obvious when wages and salaries represent only 2 per cent of the work of production, this will not buy the goods produced when 98 percent of the work is done by extraneous energy. In other words, an abundance of goods and services produced by machines cannot be sold for money earned as wages.

America's sore economic need today is the need of an adequate system of distribution.

For lack of a distribution system, our political rulers have been criminally wasting, destroying and giving away to other countries billions of dollars' worth of the best of our foods and other essentials each year for more than 20 years, while millions of Americans have gone hungry for the food that they could not buy, because of the high price.

Millions suffering hunger in this land of abundance! Millions suffering hunger because our political 'economists' say there is 'too much' food! Millions suffering hunger because we have a destruction system, instead of a Distribution System!

Since our abundant production cannot be sold, or adequately distributed for money, it will have to be distributed 'without money, and without price,' to all individuals by means of a non-transferable distribution certificate, the Energy Certificate, issued to each individual.

With the new distribution of abundance without price, nobody will have any use for money. Money will go out of use entirely.

And when money, 'the love of' which 'is at the root of all manner of evil,' goes out of use, 95 per cent of all crime (the percent of crime committed for money or for the equivalent of money, according to court records) will go out of existence. The people will be relieved of a $15 billion a year crime bill, besides being relieved of all the suffering, shame and degradation that goes along with that amount of crime.

In any economy of equal and abundant distribution to all individuals, no one will be on 'relief,' no one will be receiving 'something for nothing.' Everyone, of course, will properly be expected to contribute his or her share to the public work; and scientists say that from here on into the future, it should not be necessary for anyone to work more than 16 hours per week for twenty weeks in order to produce the equivalent of an abundant lifetime income.

There are those who object to the idea of everyone being allowed to enjoy plenty with little work—that is, everyone except themselves — with the argument that, 'If everyone could have plenty with so little work, no one would want to work at all.'

In the book 'Equality' where Doctor Leete explains America's new social and economic order to his guest Julian (the man who had fallen asleep in the year 1887, and had been awakened in the year 2000), the doctor explains that the final change over from the old to the New Order took place during the early part of the latter half of the 20th Century.

Well, we are living in that time period now, and it is quite apparent that the old order is obsolete and no longer workable. It is past time that America should move into a New and better Order.

But it is obvious that politics has no place in the economy of abundance. In order to move into the New Order of Peace and Plenty, it will be necessary to dispense with the political destruction crew and install a Reconstruction Crew, composed of scientists, engineers and technicians, the only people qualified to design, direct and operate an economy of abundance for all citizens.

Technocracy has the blueprints for the New America. Study Technocracy now and be informed as to the direction in which we are inevitably moving.

—Serena E. Powell, M.A.L.

Mr. Beetle Brayne Sez . . .

Dear Senator:

I have a little home in the country, about thirty miles out from a big city that is supposed to get potted with a hydrogen bomb when the bolsheviks get around to it. But that isn't what bothers me the most. I heard on the radio (and the same thing was in the papers, only there was more of it) how the people in the cities should be ready to hurry out into the country when the city is about to be plastered, or there might not be enough left of them to piece together a decent soul for Resurrection Day. And they said the people who are not right in the city should start digging holes to duck into when they hear the atom bomb coming. I'm not sure if I'm safe this far out; but I guess I have a chance, so that is not worrying me so much as this other thing I am going to mention.

If the people all rush out of the big city, then they will be hitting my place like a herd of stampeding buffaloes; and I'm afraid they won't be polite enough to ask if they can come here. I guess they will be pretty scared, and a bunch of scared people are almost as bad as a mob of mean people. I was going to dig a hole to duck into myself; but soon after I got started, it occurred to me that some of these people from the city would try to take it away from me because they wouldn't have a hole of their own. Besides, this ground is hard and full of big rocks and I'm in no fit condition to dig holes anyway. Also, my place is small and I have no place to put the dirt.

If I can hold onto my house, that will be doing pretty good, I think. I have a shotgun and that might help to keep the people away if I happened to have enough ammunition. But, then, if people are scared of atom bombs, I'm afraid they won't be in a mood to stop for a little old shotgun. Also the house has four sides and I can only shoot the people coming from one side at a time. I could get another gun for my wife too, but she doesn't like shooting people, not even rabbits.

Now, what I want you to do is pass a law that would prevent anybody from telling the people in the city when they are going to get hit with the atom bomb. Then, they won't make a mad rush to the country and menace us peaceful country folks. We don't like to shoot them anyway, besides it might not be legal, and it would be a nuisance to bury them afterwards. As I said, the ground is hard and full of rocks.

There is another thing that I would like advice about. If the city is vaporized, what happens to my job which is in the city? Is it safe to leave my money in the bank there? And where do I go for groceries and things if the stores are all smashed or contaminated with fallout? I wish you would look into this matter and write me when you happen to have time.

Sincerely yours,

(Signed)

Beetal Brayne

P.S.: I will be looking for a reply in about four days. It will take two day for this letter four days. It will take two days for this letter letter to get back to me, the postman says.

Termites . . . Beware!

University of Calif., May 3 — Effective termite inspection without extensive damage to walls and flooring is promised by a new listening device developed by Roy J. Pence, principal technician in entomology at the Los Angeles campus of the University of California, and Stephen Craig, electronics engineer.

Atomic Energy School

Los Angeles Times, Washington, March 5 (AP) —Scientists and engineers from 19 foreign nations will start this month a seven-month study of peaceful uses of atomic energy.

The Atomic Energy Commission is conducting the school at its Argonne National Laboratory near Chicago in cooperation with the State Department and the Foreign Operations Administration.

Fewer Jobs — More Production

Wall St. Journal, March 2 — Tide Water Associated Oil Co. will erect a $100 million oil refinery on a 4,200-acre site on the Delaware River, 15 miles south of Wilmington, Delaware.

. . . Its schedule calls for placing it on stream before the end of 1956. . . . The plant will have a capacity of 130,000 barrels of crude oil daily, and will employ about 700 people.

Tide Water is in the process of closing its big refinery at Bayonne, N. J., which at its peak could process about 87,000 barrels of crude oil a day, because it is "obsolete." The company had said it wasn't economically justifiable to try to rehabilitate it. At full operation, that plant employed 2,300 workers. Lack of enough land and high taxes were drawbacks to modernization there. . . .

The result of modernization: increased productive capacity and decreased man-hours.

Cold Storage — Modernized

Saskatoon Star-Phoenix — Science has produced what promises to be a revolutionary method of storing apples and pears, and could lengthen the fruit marketing season by several months, according to D. V. Fisher, dominion experimental station, Summerland, B.C.

Dr. Fisher told the Southern District Council, an organization of fruit growers, that the new developments are by the control of air. The effect would produce in the fruit a self-anaesthetized condition by sealing it in an air-tight compartment or room. The fruit uses up the oxygen in the air, but gives off carbon dioxide which acts as a preservative. . . .

. . . In the case of pears, controlled air storage had proved easy and profitable for Wenatchee, Wash., fruit growers, who were very pleased with the results, Dr. Fisher declared. He demonstrated to the growers how polyethylene bags could be used to line a pear box. When filled, the bag closed and sealed with a twist, the package could be stored in the usual cold storage manner.

D'Anjou pears packed this way kept for about two months longer than those stored in cold air, and it was the answer as far as Bartlett pears were concerned. Another factor in favor of the new method of pear storage was that flavor was not impaired.

Lo! The Poor(?) Farm

Chicago, April 9 (UP) — American farms are getting larger and fewer.

The number of farms in Illinois is the lowest since the Civil war period. But the present land area of Illinois farms is nearly half again larger.

The average Nebraska farm advanced from 157 acres in 1880 to 451 acres in 1953, a growth of nearly 300 per cent.

Missouri has lost 39,000 farms in the last 20 years, Minnesota 28,000 and Texas 171,000.

A rural revolution seems to be erasing steadily from the national scene the picture of the American farm as most of us remember it.

Farm authorities queried by the United Press generally agreed the revolution was touched off by a combination of mechanical and economic factors.

Harold Hutton, president of the Oklahoma Agricultural Board, explained it this way:

"The ability of one man to farm more acres is the principal reason for the reduction in the number of farms. The trend toward grassland and the fact that land is so costly are other factors. A young man who wants to be a farmer these days has to have considerable capital in order to get started."

This was reflected in a report on Texas agriculture. There were 170,450 fewer farms in Texas in 1950 than in 1935. But while the value of the 501,017 farms in 1935 was set at $2,573,704,000, the 331,567 farms in 1950 were valued at $6,720,53,000.

The year 1935 apparently was the high point of U. S. agriculture in total number of farms. The U. S. Department of Agriculture reported there were 6,814,000 farms that year, 1,389,000 more than in 1954. New York State's 1935 farm population was 784,483. In 1950 it was 577,654.

Math Dahl, North Dakota's Commissioner of Agriculture, said that following World War II "the more successful farmers bought up more property."

Roy J. Freeland, Secretary of Kansas' Board of Agriculture, said that about 13½ per cent of the U. S. population is producing agricultural needs for the entire nation. A hundred years ago, Freeland said, 80 per cent of the population was required to do the same job.

"This means," Freeland said, "that 60 per cent of our population has been released to devote their time to other activities which increase the standard of living of the nation."

Freeland said that some countries still need 80 per cent of their population to supply food. . . .

The days of the small 'one mule' farm are gone, replaced by large mechanized agricultural manufacturing plants.

Lo! The Poor(?) Farmer

Long Island Press, March 20 — Mechanization and technology have changed agriculture so swiftly in recent years that perhaps a third of the nation's 5,425,000 farms are not needed to supply domestic and export needs.

Census bureau reports indicated that in 1950, nearly all the farm products moving to market were produced by 55 per cent of the farms. The other 45 per cent produced only about 5 per cent of the market supply. In the latter class were mostly small farms.

The production advantage will be shown by a new agriculture census being taken this year.

Science and research have moved fast since the war and both are being encouraged by Secretary of Agriculture Benson. Incidentally, in a report on farm technology issued a few years ago, the department likened it to the magic porridge mill in an old story. The boy who had the mill couldn't stop it. Soon his whole village was choked with gruel.

Science keeps learning more about soils. Atomic research promises to open vast new possibilities. Engineers perfect more labor-saving machinery. New ways to preserve foods come from laboratories. Plant innovations, ways to control insects and diseases, more knowledge of breeding, and countless other developments bring higher and higher productivity.

The tractor, the truck, the harvesting combine, and the automobile have eliminated need for literally millions of men in agriculture. . . . This increased efficiency is reflected in many ways. In 1900, for example, each person in agriculture produced, on the average, enough to feed and clothe 6.95 persons. By 1950 this productivity had grown to 10.81. By 1953, it had climbed to 17.86.

Because the increase in efficiency was greater than the growth in the population and in export

markets, it has forced many out of farming. Farm population has declined a third in 20 years. Likewise, the number of farms has decreased, although the total farm acreage has gone up. There were 6,814,000 farms in 1935. Today there are 5,425,000.

This squeezing process is putting land into fewer hands. In 1940, for example, farms averaged 174 acres. By 1950, the acreage had climbed to 215. This year's farm census is expected to show an even larger average size.

Even if scientists went on a long holiday, further sharp increases in efficiency could be made because a goodly share of the medium and large farms have not yet caught up with latest in science. . . .

Saturation Point . . . When?

U. S. Dept. of Agriculture — In the Dept. of Commerce Buildings at Washington, there is a big population meter which records the estimated increase in our national growth. When we left Washington this morning, the meter read approximately 164,709,000. By tomorrow morning it will read approximately 164,716,000 — a gain of more than 7,000 persons in 24 hours.

Let me put our current rate of population growth in terms of a few comparisons. Every 30 hours we add to our national population as many people as there are full-time students at Purdue.

Every two weeks we add the equivalent of another South Bend.

Every two months we add the equivalent of another Indianapolis.

Every 20 months we add the equivalent of another Indiana.

We can reasonably project a U. S. population of about 207 million by 1975. In other words, we may have 25 per cent more people in this country within the next 20 years.

Now what about the food supply for this increased population? For the past 35 years the cropland acreage in the United States has been practically stable. In 1920 we harvested 347 million acres. Last year in 1954 we harvested 337 million.

During this same 3½ decades, however, our population increased by 56 per cent and our farmers provided an improved diet for these growing numbers.

How was this accomplished? It was made possible in part by mechanical power which released for other crops some 75 million acres which formerly produced feed for draft animals.

We also reduced by about 20 million acres the cropland devoted to producing for the export market. But the biggest and most important factor has been our increasing ability to produce more food and fibre per animal, and per man-hour to provide an even better diet for a rapidly growing Nation. . . .

—Excerpts from the Sec'y of Agriculture's speech before the National Institute of Animal Agriculture, Purdue Univ., Apr. 14

What will happen when the population increase reaches its point of tolerance?

Engineers at a Premium

The critical shortage of engineers and scientists in America is potentially a greater threat to our national security than are any weapons known to be in the arsenals of aggressor nations.

Since 1950, there has been a steady decrease in the number of technical graduates from U. S. schools which has now leveled off at less than half the 1950 figure. This alarming decline has occurred at a time when advances in technology have imposed mounting requirements for technical personnel in industry and national defense.

The need for engineers, scientists and technicians has been particularly serious in aviation, where research and development demands have multiplied at an almost unbelievable rate, and where design and production have become infinitely complex operations.

Because the aircraft industry is the backbone of our air power, the present and prospective future shortages of skilled personnel in this industry constitute a grave threat to our continuing air leadership.

As a matter of national policy, the United States has embarked upon an air power program designed to assure qualitative superiority over an indefinite period of years. Reliance will be placed upon our possession of better air power, more effective air power, rather than upon vast numbers of aircraft.

It is obvious that this effort to maintain our qualitative superiority in the air will require the efforts of tremendous numbers of scientists and engineers. We face many problems involved in the design and production of aircraft which will, in the not too distant future, fly and fight at multiples of the speed of sound. There are problems of heat, of control, of materials, of electronics, and many others. As yet, we have barely started the exploration of the aeronautical sciences.

The only way we can find the answers to these knotty problems is to assure that America has adequate numbers of scientific and engineering personnel, and that their energies are devoted to this end.

. . . Talented young Americans have been called this country's greatest natural resource. It is vital to our security and welfare that those who have been endowed with the talents meet the challenge and build careers for themselves and leadership for their country in science and technology.

—Planes, Jan. 26, 1955
Donald A. Quarles
Assistant Secretary of Defense
(Research and Development)

University of Calif., May 3 — Cosmic rays turn the atmosphere into a natural acceleration chamber for study of the smallest atomic particles. That is the main reason for current interest in this form of radiation, according to Dr. Edward Teller, professor of physics on the Berkeley campus of the University of California.

Faster Tools Unveiled

Watertown, Mass (AP) — Scientists of the United States government Tuesday unveiled a new cutting tool, made from easy to get aluminum oxide, which cuts steel like cheese. The new tool may make this country relatively independent of foreign produced, strategic tungsten.

. . . It may cheapen the price of machined metal products. And it is expected to find its way into the basement shops of home craftsmen.

The heart of the new tool, developed for American industry at the Gen. Thomas J. Rodman laboratory of the army ordnance corps Watertown arsenal, looks like a piece of chinaware, or a bit of tile from your bathroom floor. Yet this ceramic material sliced steel like an apple paring from a cylinder whirling on a big lathe at a rate three times as fast as hard, metallic carbide cutters. The carbide had replaced high speed steels in the middle 1930's.

It may lead to the development of super-high-speed-lathes and other machine cutting tools because it is free from the over-heating limitations which reduce the cutting speeds of both high speed steel and even the tungsten-cobalt carbides. . . .

Building Gets 'Raincoat'

Wall Street Journal, March 24 — Transparent 'Raincoat' is wrapped around a Stamford, Connecticut church during construction. The polyethylene sheath admits light to workers toiling under it and protects them from storms and cold. Besides preventing work interruptions this past winter, the 'raincoat' has kept masonry from freezing.

Catholicism on Wane

Los Angeles Times, Buenos Aires, Feb. 10—The Ministry of Education announced today the discharge of 100 Roman Catholic priests from teaching jobs in Argentine public schools and three from top positions as education inspectors.

The Ministry said the ousters completed its program of removing the church from a position of influence in schools supported by the government. The Catholic religion still will be taught but students will not have to earn passing grades to be promoted.

Power politics between church and state in a Roman Catholic fascist state.

Tuna Industry 'Dead'?

San Pedro, (UP) — Wives of 40 out-of-work fishermen went to Sacramento to protest against competition from frozen Japanese tuna arriving at canneries here. The women left after a Sunday demonstration in which boats draped in black crepe paraded through Los Angeles Harbor depicting the 'death' of the fishing industry.

Mrs. Andrew Zitco, spokeswoman for the wives, said she would try to testify before the state commission to seek relief from imports that have idled some 90 vessels and cut wages of many fishermen. The group included several women from San Diego.

Anthony Sokolich, business agent of the Fishermen's Union, said 90 local boats with full loads of tuna have been tied up here and at San Diego for three months, unable to unload because of the Japanese competition.

'Nuts' Growing Fast

New York, (AP) — Mental illness took a "greater toll" in the United States last year than ever before, the president of the National Association for Mental Health reported recently.

Richard Weil, Jr., submitting the report at the organization's annual meeting, said that:

More than half of all hospital patients are being treated for mental ills. . . .

Aircraft Speed Increases

Planes, Jan. 26 — Intensive research and development by the aircraft industry in recent years have led to unprecedented speeds for modern U. S. aircraft, with performance increasing at a rate far greater than at any time in the history of aviation. Between World War I and World War II, the speed of aircraft increased at an average annual rate of about 15 miles per hour. Since 1947, the average annual speed increase has been 165 miles per hour.

Univ. of Calif., March 15 — A new electronic luminous analyzer may aid architects in the design of well-lighted rooms for schools, offices, and the like, according to Philip F. O'Brien of the engineering department on the Los Angeles campus of the University of California where he developed the device. It is an analog computer that can electronically simulate design factors influencing illumination.

CHANGE OF ADDRESS

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TECHNOCRACY

North America's Only Social Dynamic

WHAT?

Technocracy is the only North American social movement with a North American program which has become widespread on this Continent. It has no affiliation with any other organization, group or association either in America or elsewhere. The basic unit of Technocracy is the chartered Section consisting of a minimum of 50 members and running up to several hundred. It is not a commercial organization or a political party; it has no financial subsidy or endowments and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are $6.00 which are paid by the member to his local Section. Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHEN?

Technocracy originated in the winter of 1918-19 when Howard Scott formed a group of scientists, engineers, and economists that became known in 1920 as the Technical Alliance — a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934 Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundation of the present Continent-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHERE?

There are units and members of Technocracy in almost every State and in every province in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces. Members of Technocracy are glad to travel many miles to discuss Technocracy's Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHO?

Technocracy was built in America by Americans. It is composed of American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this Continent. Membership is open only to American citizens. Aliens and politicians are not eligible. (By politicians is meant those holding elective office or active office in any political party.) Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher, or housewife—so long as you are a patriotic American—you are welcome in Technocracy.

The TECHNOCRAT

Offering to the American public a medium by which it can learn the facts regarding the transition period in which we are moving toward a New America of technological abundance.

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June, 1955 Whole No. 174

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APPLIED SCIENCE PRIMER

In the past, when man-hours of human labor formed an essential part of wealth production, it was possible to effect a socially tolerable distribution of the product by means of a monetary payment on the basis of the hours of labor expended in the productive procedure.

At the present — and in the future — since the hours in the productive processes have already become unimportant, and shall become increasingly less important with time, Any Distribution of an Abundance of Production, Based Upon the Man-Hours of Human Participation Can Lead Only to a Failure of the Distributive Mechanism and Industrial Stagnation.

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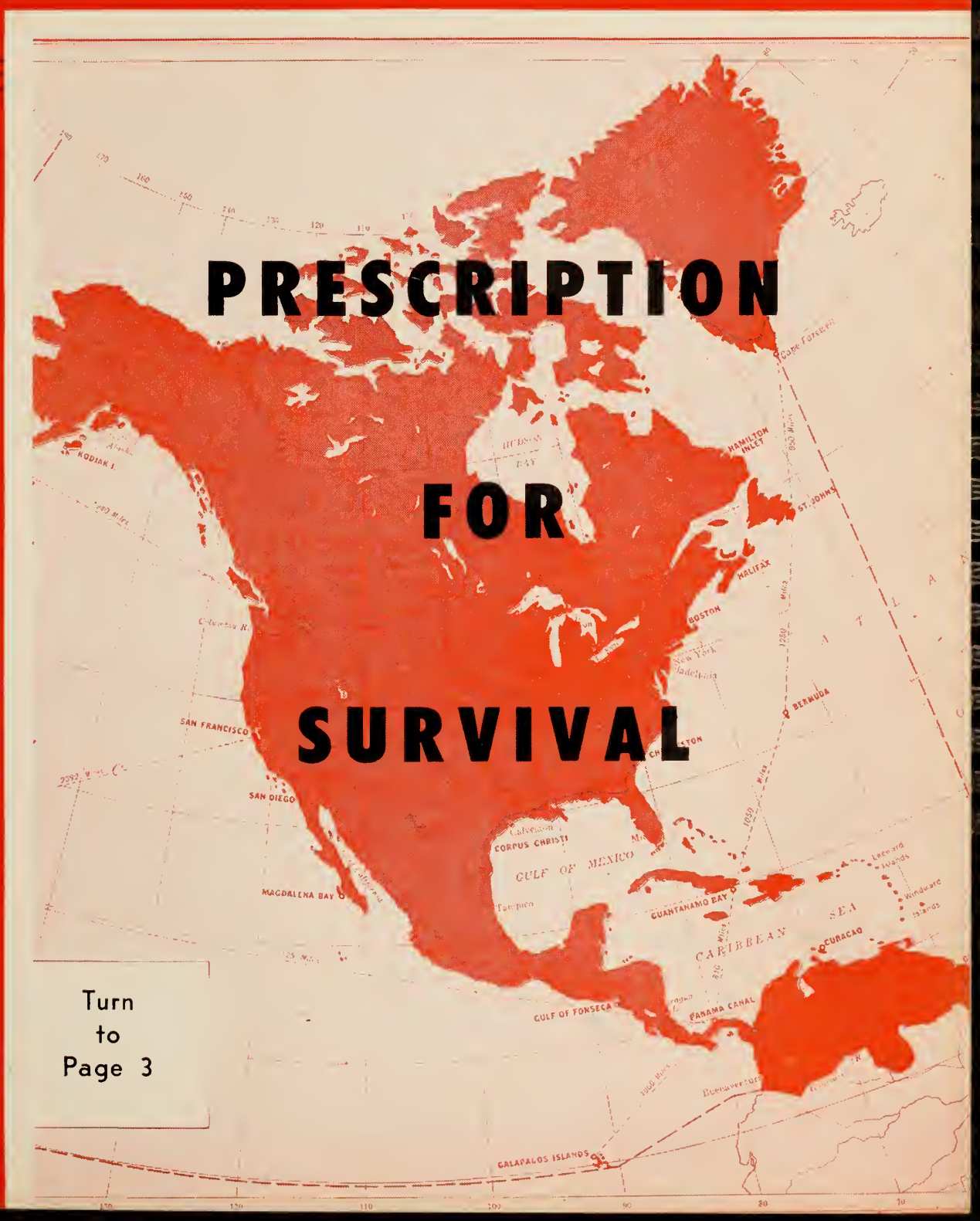

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The TECHNOCRAT

SEPTEMBER, 1955

Editorial

. . . Trail Blazing

Peoples of the world who bear the brunt of war are yearning for peace. Many of them believe we can have peace only by creating a world government. Those who talk of 'One-World' in vague generalities — without indicating more specifically what kind of world they mean and for how many people— are guilty of a breach of promise to over 2 billion people. Bertrand Russell, the noted English philosopher, exemplifies this point of view in his writings where he advances the idea of the need of an international authority to bring about peace by claiming we can now abolish poverty, fear and war.

War with its senseless slaughter of life is followed by such a revulsion that Peace Crusades are formed by peoples all over the world who sincerely believe they can stop a repetition of this insane holocaust. Yet, at the sound of the war drums, they are again caught in the tentacles of the Price System octopus. At least, the great advance in technology is now undermining the probability of war. Our leaders are being forced to decide against a war of possible annihilation.

The 'Have-not' countries of the world look on the United States as the 'Have' country since it has developed a high energy civilization which is able to produce abundantly. This has been made possible through the inventive development of mechanical slaves which are freeing its people from the old order of poverty and want. Due to the opportunities on this continent, man is 'blazing the trail' into a new concept of living — a functional methodology.

When the white man came to North America a few hundred years ago, he found a spacious continent sparsely populated, a temperate climate, navigable rivers and lakes, and ample accessible resources. There were no political boundaries to stop the free flow of resources nor absentee landlordism or domination of a foreign power to syphon off the wealth of the land as are the prevailing conditions in other countries. Yes, he ruthlessly exploited this continent, but he developed the great industrial and commercial centers of today.

The peoples of other countries have different problems to conquer than those of our forefathers. Traditions grown hoary with age will have to be abandoned; political boundaries and religious intolerance will have to be overcome; the menace of over-population will have to be faced. These problems can only be solved by the people in their own geographical areas. When these have been accomplished, they can progress rapidly as they have the advantage of the 'know-how' and skill developed through the years by science and technological inventiveness of the 'Have' countries which is at their command.

America still faces some serious problems which are diametrically opposite to those of the 'Have-not' countries. Our technology has advanced to the stage where it compels the production of abundance though operating under the old scarcity System of Price. This leaves a surplus which becomes a financial loss since it cannot be sold for a profit; this is accelerating unemployment and shortening the work-week which decreases the total purchasing power. Another problem that is accelerating is the breaking down of the morale of our people because of a decaying social order.

Technocracy's analysis, which political leaders of this and other countries do not comprehend, has long shown that it is the physical factors that made possible the development of technology which is ushering in a new era of human existence and kicking out the old order of picayune business and political intrigue which are trying to perpetuate the outworn Price System methodology. These facts must be understood and accepted by America's leaders in time to avert chaos.

To solve our problem, we must institute a new social order. Technocracy has the blueprint with the specifications that are 'in complete intellectual and technical accord with the age in which we live'; and only by the installation of a Technate can we 'blaze a trail' worthy of America's destiny as a World leader.

Technocracy is a social movement for the North American Continent; organized and operated by North Americans only, for the sole purpose of preparing North Americans for the social change which the impact of technology is making imperative.

Technocracy is 'blazing the trail' into the first functional social order ever instituted in all recorded history. Join Technocracy NOW!

September, 1955

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Whole No. 175

PRESCRIPTION FOR SURVIVAL

Once a social area has adapted to a high rate of energy consumption, the flow of energy must be maintained; for, there is no possibility of returning to a low energy state without extremely serious consequences.

North Americans are riding high on the world's greatest wave of prosperity; yet, not all is as well as it appears to the casual observer. For, we have arrived at that point in our history where we must reappraise our collective situation and plan a new strategy for survival. To all appearances, the ancient problems of survival have been overcome. But there are new dangers, some obvious and apparent, others subtle and obscure, which threaten our collective security and individual hopes for survival. They are not problems that are subject to conquest by the individual, however; they must be assailed by all the force and ingenuity of a whole Continental organization.

Attacks from wild animals are no longer a probable hazard for North Americans. Starvation is not an imminent menace, except to a few unfortunate individuals of political inconsequence who have failed to keep ahead of the Price System. Disease, sickness, and disability have been greatly reduced as threats to the survival of individuals and populations. Accidents have been drastically reduced in industry, mining, railroading, etc., where public supervision is rigorously applied; although, in the home and on the traffic lanes, where individual decisions still dominate, accidents are an ever-present danger. Rampages of the elements ('acts of God') take surprisingly few lives compared to former times, in spite of spotty local exceptions. War has reached the stage of destructiveness where the national leaders are being forced to make 'agonizing reappraisals' in favor of peace rather than face the wrath of their own people. Even the Korean Adventure was enough, in combination with other things, to sink the Democratic administration; and the Indo-Chinese Affair probably would have sunk the Republicans if it had not been terminated prior to expectations.

Although the hazards of war are far from *passe*, the real problems that face mankind are problems of peace. But if the problems of peace are to be fully met and overcome, they must be approached as if they were problems of war. Mobilization for peace must be no less thorough and comprehensive than mobilization for war, if we are to survive the peace. Under a laissez faire peace, especially when it is infected with the virus of commercialism, a social rot sets in. In a high energy society, this social rot is far more destructive and malignant than under-human toil societies, because it proliferates so rapidly. Already on this Continent, it has been allowed to spread much too far. Business and government have become almost synonymous.

In outlining the campaign for survival on the Continent of North America, we must first define our enemies, align ourselves with our allies, and clarify our social objectives.

In essence, our struggle is a war against waste. More specifically, the major enemies are Ignorance, Superstition, Human Toil, Inefficiency, and Extravagance. Extravagance is manifested in an incomplete utilization of recurrent resources and a wasteful dissipation of our irreplaceable resources. These enemies are not personal, nor are they represented by a social class. The old concepts of revolution and class struggle have no place in the solution of the problems of this Continent. The problem and the technique for meeting it are unique in human history. We can rely on no precedent or proven formula for dealing with it.

The enemy is not merely a set of symptoms. It is to be found in an institutionalized form in our present system of social operations. It is the Price System. The Price System spawns the waste and inefficiency which are anathema to any high energy civilization.

Price System Always Destructive

The Price System was bad enough in the days of human toil and scarcity, when its magnitude of destructiveness was so low that it could be tolerated in an area for centuries. However, even in early times, it had a strong tendency to deplete the accessible resources. Timber is an outstanding example. Now, all kinds of resources are being engulfed and dissipated by the Price System, as it acquires more energy with which to power its destructiveness. Social orders that were once great have faded away or are now fading away for lack of vital resources.

Great Britain's position of world dominance was based upon her forests, her coal, iron ore, and tin. With these resources gone or fast disappearing, Britain is declining as a first rate world power. In a similar way, depletion of easily exploitable resources was a potent factor in the declines of Greece, Rome, Italy, and Spain. Lack of resources was the chief roadblock to Japan's expansion. North America's preeminence in world affairs has been built upon the world's richest storehouse of mineral and biological wealth. But, already, we are finding bare

Destructive incentives of the Price System tend to exhaust resources. An outstanding example is this once heavily timbered area.

—Photo courtesy of U. S. Forestry Service

spots in our storehouse. The bison and passenger pigeon are gone; freshwater fish and coastal shellfish are disappearing; the forests are mostly gone; iron ore, copper, lead, zinc, mercury, and petroleum have been exploited so extensively that major parts of our current consumption of these resources depend on imports from other continents.

Under the Price System, the game is to grab off and commercialize the richest of the resources as fast as possible and give no thought to the long term need.

Over the long haul, we cannot expect to import from other continents resources to make up for what we have squandered here. We must view the resource problem with a long range perspective. We must realize that the resources we have now are the only ones we shall ever have. We cannot be *blase* about our extravagance and assume that adequate substitutes will be found or that, somehow, 'the scientists' will come to our rescue with remarkable new discoveries. Possibly, most of the resources which are in scarce supply will be replaceable with suitable materials from more plentiful sources; possibly, there will be changes in our mode of life that will require smaller quantities of certain rare materials; and, possibly, new methods of synthesizing or recovering certain materials will make the situation with respect to them less critical. But, until such alternatives are in sight, it is folly to depend on them as though they were certainties. In the meantime, we must treat our visible supplies or resources as though our survival depended on them for the next thousand years at least.

What would happen to our Price System economy if we were to promptly prorate our visible supplies of petroleum over the next thousand years? There is no assurance that our petroleum production can be sustained for another twenty years, even if consumption rates should not increase above those of the present. Yet, the primary concern of the oil merchants is to get as much of the petroleum out of the geological formations as possible and as soon as possible and to sell it to consumers. In fact, the petroleum interests are actively promoting more and different uses for oil and its products. In other words, the Price System would just as soon as not deplete our petroleum reserves in ten years if possible. At the same time, it tries to obscure the situation with vague hopes that more oil fields will be discovered or that 'the scientists' will find a substitute that can be merchandized in equal volume. Finding a substitute for eight million barrels of oil per day will take some finding! We had better have something more certain to go on than the wish-laden, whitewash propaganda of the petroleum merchants.

The strategy that this Continent should immediately implement with respect to petroleum has three principal aspects: (1) Make a systematic and thorough exploration of the Continent for petroleum deposits; that is, learn as far as possible just how much petroleum we have available for future use. (2) Take all practicable steps possible to reduce the amount of petroleum being consumed. (3) Seek other sources of energy to relieve our dependence on petroleum. It is needless to point out that the mobilization and control necessary to carry out this strategy are not to be found within the Price System. Although the need for it is obvious and apparent, and although no one dares to think what would happen to the Continental economy if its petroleum should become exhausted, yet the merchants of the Price System would screech with hysterical anger if such a strategy were to be seriously considered by the social administration of this system.

Price System a Profligate Economy

The same case could be stated for a number of other irreplaceable resources as the one we have stated for petroleum, with differences in detail only. Even the vast deposits of coal in the United States cannot be depended upon as a major source of energy for much more than a century; so, coal must also be treated as a disappearing resource.

Lead is a metal which has many uses, and it is fairly common as metals go; but, already, it is becoming scarce in terms of the need for it. As for any extended time into the future, we may as well regard it as a 'gone gosling.' Much of the lead that is used at present is unrecoverable after use; for example, the lead used to make ethyl gasoline and white paint. Other applications, such as sheathing for telephone cables and bullets, results in a low percentage of recovery, due to corrosion or loss. What would our society do without lead? Yet, that is a serious probability for the near future, unless we adopt a strategy with respect to its use that will ensure its prolonged availability. We cannot depend on its being replaced by adequate substitutes, nor on its becoming recoverable from sea water or rocks bearing only trace amounts, or becoming obtainable

in larger amounts from as yet unknown sources. There is a possibility, of course, that sometime in the future, we will not require lead for most of the things we use it for today; but it is folly to gamble on such a remote possibility.

With regards to the use of lead, as with other metals, petroleum, and coal, we should explore the Continent thoroughly and locate all possible sources of supply. Further, we should work seriously on the development of techniques for recovering it from trace deposits which are not yet feasible of exploitation. Then, we should avoid using any lead for purposes that can be provided just as well with recurrent or more abundant materials, particularly where recovery of it for re-use is at a low rate. A special effort must be made to recover for repeated use all the lead that can be recovered; and this includes planning for its recovery in advance of the use as well as for a program of collection after use.

The case for copper is even more critical than that for lead.

Extraneous Energy a Necessity

Energy is fully as vital as are metals in our modern society. Without extraneous energy, a social area is severely limited in what it can do or contemplate. Given an abundance of energy, a social area can do many things that would be inconceivable in a low-energy state. Among other things, it can move small mountains, dam large rivers and make big lakes, change the surface of the terrain, and bring verdure to desert areas. It can delve deep into the earth for metals and oil.

Once a social area has adapted to a high rate of energy consumption, the flow of energy must be maintained; for, there is no possibility of returning to a low energy state without extremely serious consequences. Consider, for example, the social consequences of 'returning' to the energy state which prevailed on this Continent a hundred years ago — of being reduced from electric lights to candles, from travel by aeroplane and fast train to travel by stagecoach (assuming that there would be enough candles and stagecoaches available).

Man has learned how to harness extraneous energy in many of its varied forms and to transform it into the form most suitable for the particular use of the moment. The mechanical energy of falling water, of wind, and tides is being used to a partial extent, especially the first. Heat energy from within the earth and on the surface of the sea is being used to a very slight degree. The chemical energy of plant growth, coal, petroleum, and animal oils is being heavily exploited at present as our source of energy, mainly because it is so condensed in this form and convenient to handle. Now, atomic energy is being harnessed for a variety of uses; and much hope is attached to it, because it is far more condensed than chemical energy. But, so far, atomic energy is far from easy to handle. Radiant energy from the sun is the largest single source of energy available to man; and it has the advantages of being recurrent and of being devoid of destructive waste products.

The campaign for survival must give priority to the harnessing of extraneous energy on a large scale, with top priority allocated to recurrent sources. North America should be mobilized, therefore, to develop water-power, wind-power, and tide-power to a practicable maximum. These sources of energy are recurrent; and, although the original installations must be huge, the upkeep and other social costs after installation are insignificant. In the realm of chemical energy, emphasis must be placed on plant growth, while the use of coal and petroleum must be strongly de-emphasized. These latter should be considered, first of all, as chemicals rather than as fuel.

Energy From Solar Radiation

Much use can be made of atomic energy, and much research must be devoted to it; but we must not think of it in exclusive terms at this stage of its development. The materials from which it is obtained are too scarce; the processing is very costly; and the waste products are highly poisonous. Continued research may overcome the major obstacles to the practical application of atomic energy in abundant amounts over a long period of time; but, in the meantime, in the absence of any definite assurance of such, it is urgent that we develop other sources of energy — sources that we know we can depend on for an indefinite period.

Inevitably, we must turn our attention more and more to the energy contained in direct solar radiation. We have not as yet perfected means of capturing energy directly from this source in large amounts, although in small amounts certain techniques are very efficient. Perhaps, if the society were to apply as much effort, material, and personnel to this problem as it is now expending on atomic energy, substantial progress could be made in a short time. Anyway, as things now stand, the most probable and most feasible source of a continued supply of energy in vast amounts for an indefinite period of time is direct solar radiation. May we suggest that research in this field deserves at least as much attention as the encirclement and suppression of socialism?

Social Objectives Outlined

The desirable social objectives of the North American Area may be listed as follows: (a) An abundance of goods and services for the entire population; (b) a minimum of human effort and vigilance in the operation of the functional sequences; (c) maximum security for the society and the individual; (d) a wide range of individual selectivitv and opportunity; (e) a high standard of education and health; (f) a centrally-controlled and dynamic social mechanism committed to the fullest development of the Continent for the benefit of its human inhabitants — one with a perspective that covers many centuries into the future. In general terms,

these are the desirable objectives for the society of this Continent; *and they are also the attainable objectives of this Continent.*

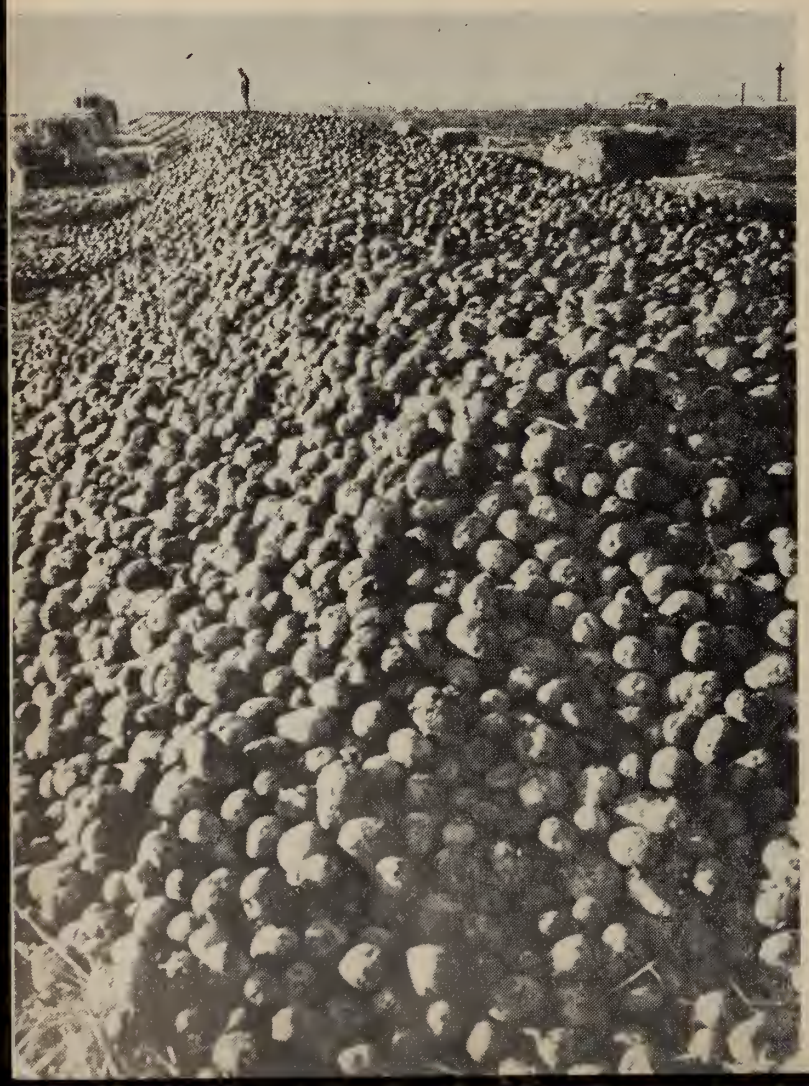
These objectives cannot be achieved through political legislation or decree (except possibly under the most extreme compulsion, applied by external factors); they cannot be materialized by the methods of business promotion or the compromisations of advertising ballyhoo; they cannot be arrived at through the arts of moral rearmament or liberal reform. In other words, the institutions and arts which have been most instrumental in promoting social behavior in the past are out of their natural element when it comes to meeting the problem of survival for the future.

In this campaign, our chief allies are science and technology; and the only administrative technique that is capable of applying them to the fulfillment of our objectives is a functional control. A functional control is that form of administration which is set up to control the physical factors of a social area for functional purposes.

A desirable objective would be the distribution of our abundance, not the destruction of our goods and services.

For example, this great pile of potatoes — 4 feet high, 12 feet wide and 125 feet long and containing about 7,000 bushels — were bought under the government support program and dyed to make them unfit for human consumption.

—Courtesy Wide World Photo



The combination of science and technology, along with engineering applications, provide mankind with the most reliable means of appraising its social problems and finding adequate answers to them. The appraisals and 'remedies' of the various cults of 'medicine men' and 'witch doctors' are no longer treated seriously by informed and responsible people. At the showdown, they turn to science and technology.

The social need demands that new and larger amounts of energy be found and developed. Science and technology must do the job. The same applies to new and improved materials, of which the large variety of modern plastics is an example. We already know that advances in health, vitality, and longevity are dependent on science and technology. (In this connection, it may be noted that Pope Pius XII, during his recent illness, called in the men of science to prolong his life.) There is little doubt that if science were also applied to the problems and techniques of education this field of human interest would show marked improvement.

Instead of the society of this Continent mobilizing to apply science to its physical problems, it appears to be more interested in mobilizing to promote business enterprise, or squabble over legalities with respect to property rights, or to conduct jurisdictional disputes among political factions for the privilege of holding administrative office and deploying the armed forces. Consequently, the society of this Continent is fouled up in a tangle of business dealings, legalistic connivings, political intrigues, and preparations for war. It is not at all, or only incidentally at most, mobilized for peace and human welfare.

The four factors which are essential to the establishment of a new social order are these: Area; Resources; Energy; and Personnel.

Technocracy has specifically outlined the area most suitable to the operation of a high energy social mechanism on the Continent of North America. This area embraces all the Continent from the North Pole southward, and it extends to include the northern tip of South America, composed of Colombia, Venezuela, and the Guianas. It also includes Greenland, the West Indies, the Galapagos and all other islands from the mid-Atlantic to the International Date Line in the Pacific. And it includes all water within these boundaries. A somewhat smaller area could be considered if necessary, but it would not be so effective as the whole 'Technate Area.'

We have already stated the case for North America with respect to resources and energy. The Continental Area still has, in terms of tonnages, a huge stockpile of essential resources — coal, petroleum, iron ore, non-ferrous metals, and other minerals. It has wide expanse of fertile soil, vast mountainous and rocky areas suitable for growing trees and grasses, and it has half the world's fresh water. Under the wasteful practices of the Price System, these resources would not suffice for long.

But, under a functional control, stripped of the incentives for a hurried, wasteful depletion of the salable resources, and with a long-term perspective, the resources could be made to suffice for more than a thousand years. They very well have to!

The fourth factor is personnel. When the mechanism is in a highly developed stage and is functioning at balanced load, the operating personnel at any given time will be but a small part of the population. But, in the transitional phase, there will be much to be done in a short time, and most of the projects will be one-time jobs. This will necessarily require the services of a large number of people. In other words, there will be an urgent need for large mobile forces of workmen. These will be needed to clear away the debris of the Price System and to prepare the way for the great new projects that lie ahead. Thus, the people of the Continent must be a part of, and must directly participate in, the campaign for survival.

The mobilization for peace and survival will be no less complete and no less intense than a mobilization for waging war. The primary differences will be: The effects will be beneficial; and there will not be the casualties that a war demands.

Perhaps the human race would still inhabit the earth a thousand years from now, even if no effort at all were made for a planned survival. But what kind of people would they be and what would be their mode of life? Barring complete annihilation from man-induced radioactivity, there may still be life on earth in the year 3000 under any conditions, including something that could pass for human life. Possibly, these human forms would be the animal-like survivors of a period of chaos, or they might be the dregs of a prolonged barbarian decline. Such a human residue quite probably would be stabilized socially under a form of fascism, not very much unlike that of medieval Europe or of Tibet of more recent times. Anyway, it is highly improbable that any form of a highly industrialized modern civilization could be maintained or that an entirely new civilization could arise from the wreckage of chaos or the ruins of a social decline. A worthwhile survival for the present population of North America requires that we effectively mobilize for survival and life on the basis of the technology and resources we now have. We may as well all survive and we may as well advance our plane of living far above that of the present. But we will have to prepare for it.

Now comes the Big Question: Where, when, how, and by whom will this mobilization for survival be effected?

The 'where' is the Continent of North America. And, since the United States is the dominant nation on the Continent, it must provide the central focus of operations.

As to 'when,' the answer is, the sooner the better; and it had better be within the next decade. The longer we wait, the more desperate the situation will become, and the greater the danger of panic.

We have already indicated in a general way 'how' it must be done — by a Continental Mobilization for the waging of peace. This Continent has

This could be the alternative of our present mode of living, if no effort is made for a planned survival. —Courtesy of Techphoto

the technological capacity and the trained personnel to organize the job. There is no question about the urgency of it. We, as a society, lack only the will to get on with the job. So, this part of the question resolves itself into the more specific question, how is the Continental will-to-mobilize for survival to be activated?

First, we can eliminate certain approaches that might be suggested but which obviously would not work. It would be a waste of time and effort for one to attempt to initiate such action through business enterprise or finance; their stake is in the Price System. The same could be said for politics. What political party would consider organizing for the abolition of all politics? The reform movements, to-date, have all lacked the perspective and concepts essential to the kind of mobilization we are discussing; besides, most of them have gone political. Nor could it be done as a religious revival. First, the emphasis would be in the wrong place; and, second, there is too much factionalism among religious cults for the establishment of the unity that is needed. Further, the major religious bodies tend to be reactionary with respect to social problems rather than dynamic.

There are some who are naive enough to believe that, if Technocracy could get command of the radio, television, the press, and the movies of the nation for a day or two, we could put our idea over to the public on a mass scale, with the result that there would be a jubilant popular acceptance of Technocracy, yea, even a demand for it. But, even if Technocracy had the money to finance such a publicity splurge, there is scant possibility that we would be able to buy the use of the facilities. Their owners

all have 'principles' to uphold. But, assuming that all these publicity media were somehow available — exclusively so, and that the material was all prepared and ready for presentation, and that there was full technical cooperation all down the line, so that the message of Technocracy was carried on every radio and TV program, dramatized at every movie house, and headlined in every daily newspaper and slick magazine, and that the country were showered with millions of leaflets, still it is dubious that it would make more than a superficial impression on the people at this time.

North Americans are not going to change their pattern of thinking (or believing) over night, certainly not without an external compulsion of the first magnitude. Such a publicity barrage could be effective only at an advanced stage of popular acceptance — to foment a band-wagon stampede.

A New Social Program

The mobilization can come either through a mass movement of the people or be instituted by direct action of the sovereign power. The mass movement could come rather quickly under the stimulus of a grave and obvious emergency, although there is an almost equal chance that the action would be anarchic and soon degenerate into chaos. Or it could develop more slowly as a result of the permeating ferment of a new and appealing idea. Even the acceptance of a new gadget or a new style usually requires several years of incubation to achieve full acceptance, in spite of advertising blitzkriegs and authoritative endorsements. Hence, it is naive to suppose that a leaflet, a book, a periodical publication, a radio or television broadcast, or a movie will convert the public to a new social program. Unless the public is ready to accept something new, it will not 'reach' them in any significant numbers; and a new idea is the slowest of all things to penetrate the public 'mind.' We say this in spite of the apparent recent exceptions exhibited in the form of stampedes for Davy Crockett paraphernalia and for polio vaccine; these were things that the public was ready and eager to accept on sight — and huge profits were in the offing for the promoters.

A new social program may be imposed upon the people by the sovereign power under certain special circumstances. A grave emergency situation, such as total war or an 'invasion from outer space,' when action must come ahead of popular persuasion, might provide a singular circumstance under which the sovereign authority of an area could impose martial law or some equivalent and institute a social program by decree. This sovereign authority may be the political government, the military, or, if these default, an impromptu government. Such authorities, however, are likely to be dominated by political concepts, consequently unlikely to institute a dynamic new social program.

There is only one organization on the Continent that has the membership, the liaison, and the social incentive to immediately force social change on the Continent. That group is organized Labor. If Labor should act as a body for a social objective that is worthy of public endorsement, it could achieve that objective. It might be pointed out in rebuttal that Labor's incentives are subordinate to the Price System and that Labor is organized for Price System causes. But, it does not really matter what Labor is organized for; the important thing is, it is organized. And it so happens that Labor is organized for greater security and improved living conditions for its members. Under the Price System, Labor has no real security; and the automatic machines are chewing its future to pieces. Labor has everything to gain by lifting its sights to the greatest social objective obtainable on this Continent. It has nothing to lose but peanuts. Organized Labor could make the problem of mobilization for survival simple, direct, and imminent. Whether it acquires the perspective and initiative in time is yet to be seen.

The program for the New America is being actively carried forward and promulgated by the Technocrats of North America. Their program has been before the public for more than twenty years, now. Many thousands of North Americans have had close and intimate contact with the idea; they now reside all over the Continent. Millions of pieces of literature dealing with Technocracy have been distributed. Technocracy is a common word in the language of the Continent. The concept and the program have remained remarkably uniform throughout the period of Technocracy's activity; very little has had to be changed in spite of the major technological advancements of the past two decades and the intervening depression and wars, hot and cold. The name and symbol of Technocracy are familiar to millions of people. Technocracy is analogous to a leaven that needs only a general social ferment to make its influence spread throughout the society. It is so far ahead of all other social ideas on this Continent that it has no competitors. When there is enough of a recognition of this Continent's need for a planned survival program, Technocracy will be at the head of the list of consultants, all ready with the program, the concepts, and the perspective that this Continent requires.

The Big Question

Now for the final part of the Big Question: By whom shall the mobilization be effected? It must be effected by the people of this Continent. If we wait for it to be imposed on us from without, it will be somebody else's program that will be imposed, not ours. North Americans are not afraid of any job, no matter how big. They have had the experience of doing big things in a big way. They may not always be wise in their selection of jobs to do (as, for example, trying to pick a war with China or Russia), but they are not cowed by the magnitude.

Not all North Americans will play an equal part in the program. The great majority will merely go along with it, like they do with everything else.

There are some who will oppose it; but, considering who they are in this system, their opposition will be more of an endorsement than a liability. In fact, there are several hundred people we could mention off-hand whose opposition to Technocracy is far more desirable to us than their endorsement.

Which groups of citizens will finally be most effective in advancing Technocracy's program is for the future to reveal. They may not be the groups one would most expect.

One Plus One

The lone individual may wonder what he can do in an Area so vast and among people so lethargic. He seems so insignificant on so great a Continent. But he is not so small or so ineffectual as he may suppose. As a Member of Technocracy, he can be the bearer of a message that is alive and enduring. He can speak with a voice louder than the murmerings of ten thousand people who have no place to go. A few thousand such Members, distributed over the Continent, carrying the same message, displaying the same symbols, and speaking with one voice, cannot be denied an audience. The immediate effect of one individual's effort may not be obvious to him, for he has no way of knowing the extent or all the ramifications of his influence. Further, the effect of many individuals is not merely accumulative; it is amplified as the mathematical square. That is, two individuals do not have merely twice the effect of one individual; rather, they have four times the effect of one.

The growing signs of desperation on this Continent are being carefully concealed for fear that they will adversely effect investment values if generally known. The average citizen has no way of knowing how desperate is our chance for long-term survival at the present or a higher social level. Many individuals know something of the situation with respect to one or two details with which they come in direct contact. A few are aware of the level of our petroleum reserves. The labor union man who is past fifty and has just been automated out of a job knows something of the situation as it applies to Labor. Some government statisticians know the situation with respect to the scarcity of scientists and engineers. But very few have a general all-over view of the whole situation.

The prescription for survival on this Continent calls for a complete mobilization of the area, the resources, the energy, and the personnel of the Continent. It is not a mobilization for war; it is not a mobilization for some picayune charity enterprise. It is a mobilization for individual and social survival; and nothing could be more important than that.

—Wilton Ivie, CHQ

Automation -- the Emancipator

Trends in the robot or automation field emphasize the senility of the present mode of social operation. While the government spends billions of dollars to develop weapons of the electronic type in the name of 'defense' or for destruction, it gives only token support to that research and to the installation of electronic controls which would be beneficial to mankind.

In spite of the withholding of efficiency by the Price System and the promoters of the status-quo, the ever increasing use of machines and new techniques in production have progressed at a high rate of acceleration. Today, any mass-production process can be fully automatized. Detectors which substitute for our senses can be installed where any of our 'five' senses are necessary. Actuators and memorizers are performing the tasks of action and memory, which formerly required many human beings, at a much faster rate and with fewer, if any, mistakes. And tape feeders have been installed to act upon the variables that are taped.

Assembly workers in the factory accomplish nothing which can not be done by machines. Workers running machines make only a series of operations or adjustments that can be and are being performed electronically in a number of factories and offices throughout the country. Automatic machines could replace the white collar worker, all workers on sequence jobs, and could, for sure, even send most top executives out to pasture.

Professor Wiener, of the Massachusetts Institute of Technology, states that if we install these robots in competition with human beings under our present system, "It'll create an employment situation beside which the depression of the '30's would seem a pleasant joke." Yet he realizes, "It is a degradation and waste to assign a human being a purely repetitive task in a factory which demands less than a millionth of his brain capacity."

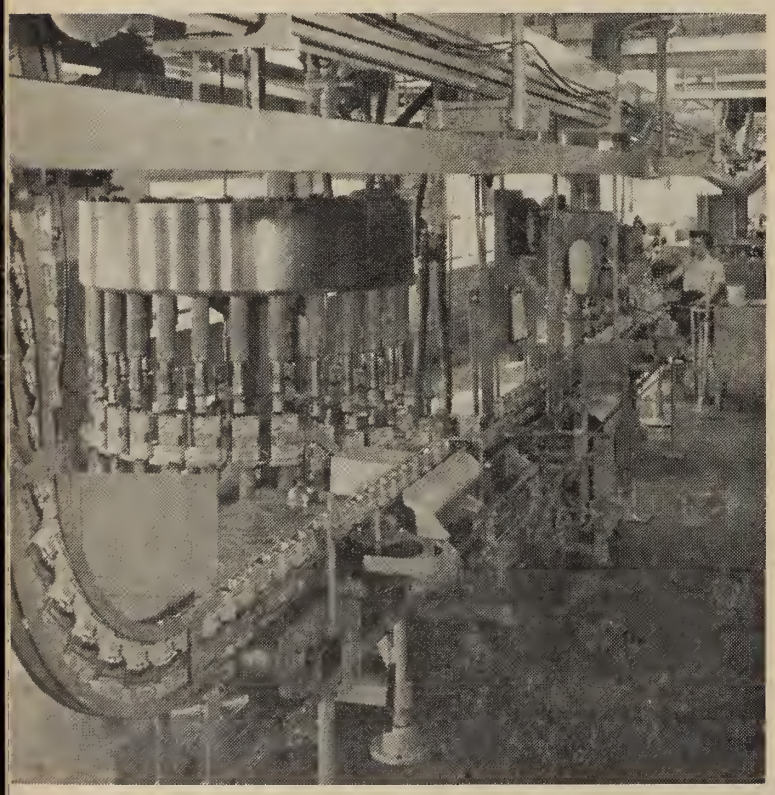
Worldwide robot authority Wiener continues: "To fill our manpower needs for all-out war with Russia we can achieve automatic mass-production in 2 to 5 years — about the same time it took to develop radar. If a full-scale war is averted we can proceed more cautiously to readjust the millions thrown out of jobs and achieve automaticity in say, 10 to 20 years. . . . If these (robots) were made available without restrictions to entrepreneurs some of them would certainly try to make a quickie fortune and get out from under before the whole industrial structure collapsed." Evidently there are restrictions here just as there are restrictions and

lack of 'enterprise' enthusiasm to develop or unleash atomic energy in the field of power, etc.

And Mr. J. M. Lageman in the Chamber of Commerce's *Nation's Business* adds, "The competitive advantage of the first robot factories would be terrific, and for a short time reconversion might produce a boom followed by a bust that would blow us sky high. On the whole, the outlook for private enterprise would not appear too bright. If we are not destroyed in the meantime, the new industrial revolution holds the promise of a technological utopia in which mechanical slaves would do most of the work that human beings are wasting their hours with now."

As we have previously stated, no matter what field or industry you may work in, there is a more modern and better way of doing your job. At the present time there are about 21 million industrial, maintenance and transportation jobs which can be considered necessary to the operation of the social mechanism out of some 60 million jobs. The other 40 million job holders are predominantly occupied with some phase of marketing, collecting or accounting for the profit involved in the transaction. They are merely engaged in intangibles which contribute nothing to the social well-being of society.

But what do you suppose will happen to the Price System with the installation of more and more automation? It is estimated that every industrial worker supports indirectly ten people in non-basic and service occupations. As automation displaces or disemploys more workers in factories, the people depending on them, such as barbers, grocers, repairmen, salesmen, clerks, etc, ad infinitum, have their businesses correspondingly reduced with the declining purchasing power. The families of the displaced workers are affected adversely as are the families of the barbers, the grocers, etc. under the present economy.



With one line operator, two can-chute loaders, and one inspector, more than 80,000 pint cans a day can be filled and cased. Johnson's Hard Gloss Glo-Coat production line is automated all the way.

—Photo courtesy Johnson's Wax

How are the millions thrown out of work going to earn a living, and how are they going to buy what our automation can produce? The answer is the crux of a dilemma which cannot be solved under a Price System. No matter what has been said about automation, drastically reduced man-hours of human toil, early retirement, more time for education and cultural activities, and more governmental function than we have ever known before appear inevitable. And the impact of technology upon the economy makes it mandatory that all goods and services be produced and distributed without price.

Automation calls for a new method of social operation, a Technate. While automation under the Price System means less and less purchasing power with the decline in man-hours of labor, the application of automation on a large scale in a Technate would reduce the man-hours of work to a minimum. The Social Control would provide consuming certificates to every North American for the acquisition of goods which are now piling up as inventories and surpluses. Without Price System restrictions or interferences it will be possible in a Technate to install the most efficient methods which will result in only a minute amount of human toil, a high standard of living for life, and enough time to do the things you have always wanted to do but lacked sufficient time and purchasing power to do. Also, complete automation will bring about lower energy cost in the operation of the social mechanism and reduce waste of our resources, thus allowing us to maintain a high-energy civilization for years and years to come. Only Technocracy has the design for the production and distribution of an abundance.

If you want a continuation of insecurity, fear of war, less purchasing power, scarcity of goods, and extravagant waste, all you have to do is support the Price System as you have done in the past. But if you want more security, peace, guaranteed full 'pay' for life, retirement at the age of 45, work only 16-hours per week, 2½ months' vacation every year, and more purchasing power than you can consume, then you must demand Technocracy's design for the distribution of abundance to all North Americans.

You owe it to yourself, to your family, and to your country, to understand the social implications of the impact of technology upon the present mode of social operation. Once you understand these implications, then you will want to do something about it. Technocracy lays the main issue squarely before the American people. You cannot escape responsibility. Join Technocracy Now!

—W. Ted Moore,
Section 16,11834

THE HUMAN MECHANISM

Does man not insist on repeating the incantations of the jungle, modified only from time to time to meet what he "thinks" are his present needs?

One of the greatest contributors to the evolvment of the Price System and to the perpetuation of it is *anthropocentrism.*

Anthropocentrism is a method of emotional thinking whereby man tends to interpret himself and his environment in terms that reflect his conceit and ignorance. For example, man once thought the earth to be the center of the universe. Officially, that is. When science reported measurements that proved otherwise, it was accused of encroaching upon the field of theology. What the church fathers did to Galileo for his "heresy" constitutes a gruesome story not too different from those of many like circumstances in which science moved in on fields that were supposed to be outside its realm.

Can science move into *human* affairs with impunity?

Let us not deceive ourselves. Unofficially, we still behave as though not only the earth were the center of the universe, but, as though we ourselves, in our small ethnic groups, were the very center of all existence. We even have individuals representing themselves, in this civilized day, to be the complete measure of all time. "I am immortal, I am, I'll have you know." Working in the field of psychology, the writer has heard these and similar expressions issue forth in the mouthings of supposedly sane and sound minded people.

"Paranoia" is the psycho-pathological term for this extreme degree of anthropocentrism. Americans, individually and collectively, are loaded with it. In fact, we encourage it in many quarters and many ways. As a result, we have murders "directed by the voice of God." And, we are just itching to "obey His will" to destroy the godless on a mass scale, even though that might mean the destruction of this center-of-the-universe "civilization."

"Ah, but, now you are out of your field," we are told. "You are a scientist. What do you know about the soul, the 'I', the inviolate X-factor of man?" Anthropocentrism often uses the language of science in attempts to prove its "points." Like "X-factor", for instance. We are told that there are in the inner affairs of humans, events which cannot be measured, predicted or controlled. These "private" events are outside the field of science, we are assured. As once was the case with the affairs of cosmology, these are areas in which the scientist is presumed to lack adequate methodology. Supposedly, they transcend the crass materialism of the micro-scope, electronic mensuration and computation gadgets.

When science begins to evaluate the human mechanism, a cry of protest arises to remind us that the human being is, after all, "more than a mere machine." So machine-like is this protest, so predictable is it, that it constitutes its own best refutation. For instance, Dr. Alfred Kinsey's recent most laudable studies of sexual behavior in man induced reactions that gave us as much information about people as did the tedius survey itself. Apparently, sex is a field of this "inner realm" in which science is supposed to have no business investigating.

Too often, anti-scientists themselves stand most in need of the benefits which objective measurements can give.

Mechanical Ingenuity

We have long known that it is possible to teach birds to recite prayers as easily as it is to teach them to swear. One might wonder how it is that man has failed to examine how he acquired some of the phrases that he repeats to himself and others, whatever their category of classification. Incidently, teaching a parrot to talk is small stuff, these days. We can teach a recording machine to do the same with greater efficiency. And it remembers after only one repetition. Let's examine a recorder that has heard things through its ear, the microphone. This one says (because this is what it has heard):

"I am more than a mere machine. I am 'I'. I am an integral unit. A part of the visible and the invisible. You can measure the size of the case that enfolds me, the length of my tape, the amplitude of my sound, and many other physical factors that comprise me as you see me. But, you cannot observe or investigate the non-physical or non-material side of me. My spiritual self is out of your field." Etc., etc. This play-back occurs every time the "on" switch is triggered by the voice of another recorder saying "we are mere machines." Each machine is equipped with automatic rewind so that after every conversation it is reloaded and ready to spout information or its pet philosophy, as the case might be. With a little ingenuity the machines could be so rigged as to enable them to modify one another's viewpoints or have their viewpoints modified by other types of circumstances. By adding the systems of electronic computers and related discoveries and inventions, there is no limit to the versatility that can be displayed by these machines who might tell you that they are more than mere machines.

Now, let us view the human nervous system. It has been thoroughly investigated, observed and measured. We know that it records and plays back, using physical principles that differ hardly at all from tape recording devices and servo-mechanisms except in degree of complexity. Given the necessary muscular structure it will enable the human machine (usually called an organism or, more vaguely, a being) to talk, act, "emote," and at times, to even engage in what we anthropomorphically disguise with the word *thinking*.

(Does it behoove the psychologist or the sociologist to say to electronic technologists, neurologists and physiologists, "You are out of your field" when it comes to the study and control of individual and group behavior?)

But, let us trace this human mechanism back a little further. Before it is taught or conditioned in the manner analogous to magnetic tape-recording, it is manufactured. And the analogy still holds, especially in view of modern automation. Biological, evolutionary and physiological processes, including the production of similar organisms (usually called reproduction, a sometimes misleading term) constitute a chain of automatic factories. These follow certain definite demonstrable physical laws. In the laboratory, life proves itself to be a mechanical, electrical and chemical process. There is nothing mysterious about it. There are none of the vaunted "X-factors" of the vagarious nature that the paranoid philosophies of men have recorded on the nervous systems of each other and themselves.

Make no mistake about it. The human mechanism is manufactured according to physical laws, just as is the less complicated magnetic tape recorder that rolls off the automatic assembly line. If there were anything "unknown" to it, how could you, or any other human know about it?

One of the phenomena that we notice in what we call living organisms, including man, is that of *tropism*. These are reaction mechanisms whereby plants turn their leaves or flowers toward the light, fish swim up-stream, animals orient position in relation to gravity, moths move toward light, cockroaches flee from light, roots grow toward the center of the earth and stems away from it, etc., etc. There are many, many tropisms relative either positively or negatively to physical forces such as light, heat, touch, gravity, sound, and electricity. All of them are easily explained in known mechanical terms without borrowing from theological exhortations.

These tropisms are usually "built-into" the mechanism during the period of manufacture — gestation or incubation — and many precede this period by being properties of the raw materials used.

The retina of the moth acts like a photo-electric cell, responding chemically and electrically to light stimulation. Neurons pass impulses to muscles on the wing that is on the opposite side of the insect's body. This is mathematically in direct proportion to the amount of light falling on the retina. Thus one wing beats more rapidly than the other until the insect is being propelled directly into the light. It has no free-will or wish in the matter. It does not fly into the light because it likes the light, as some philosophers have tried to tell us. Even the concept of survival-purpose fails to be served by this phototropism. A moth will fly into a flame even though it is consumed thereby. It cannot do otherwise.

Does human society possess tropisms which would propel it to its own destruction? It would seem so. Does man not insist on repeating the incantations of the jungle, modified only slightly from time to time to meet what he "thinks" are his present needs? One of these says that science is out of its field when it attempts to deal with individual and collective problems.

However, let us not dispair.

Preceding, succeeding and closely related to tropism is another phenomenon called *conditioning*. This term is sometimes used interchangeably with learning. Here also, there has been thorough observation made. We know that conditioning is instituted by reinforcement. An event is associated in time and experience with something pleasant or rewarding. If this is a behavior pattern, such as a political saying, the organism tends to repeat the pattern. If, on repetition of the pattern, reinforcement continues to occur, even though only at intervals and out of proportion to the expenditure of effort, the pattern becomes more and more deep-rooted. It will tend to continue.

Conditioned Reflexes

This result can be observed in rats on a treadmill. More dramatically, you can see it in human mechanisms at Las Vegas, Nevada, and under similar circumstances elsewhere, trying to beat the non-human gambling devices and games. A little more analysis and this same law comes into focus when we observe ourselves working hard for the occasional "jackpots" of the Price System.

As long as humans are conditioned to put coins into the slot-machines of Big Business, ecclesiasticism and politics (because they sometimes seem to kick back a few), the "joints" can keep operating. But, when there are no more coins, then what? Will we pry open the machines and re-distribute the coins? If so, what will we do with the coins since we have demolished or incapacitated the gaming devices?

Primates learn more rapidly than other known species. Their tropisms are more complex and can therefore be more flexible. Yet, look at the pathetic sight of a would-be-mother-monkey carrying around the body of its infant offspring which has ceased to function as a living entity. It attempts to feed it, to beat life into it and romp with it. Here is a classic portrayal of lack of information. Is the monkey capable of assimilating the information she needs in order to behave more realistically? In time, yes. She will abandon the little corpse as it becomes more shriveled and odoriferous. Also, non-reinforcement of non-response will contribute to a modification of her attitude.

Now take another primate that tries to mother a dead baby. Look at the pathetic sight of man and

his rapidly rotting Price System. See how affectionately he lavishes it with his anthropomorphic rites. How he tries to feed it, to beat life into it and to romp with it! Here is another instance of lack of information Is Homo sapiens capable of assimilating the information he needs in order to behave more realistically?

In time he will be forced to abandon the dead, smelly system that now receives his tender loving care. Will this happen *before* his conditioned tropisms propel him to self-destruction — a frequent sequence in paranoia — or, will he, *can he* allow science to move into fields which have been considered none of its business? (Like collective behavioral problems as when, for instance, they relate to distributing an abundance produced by the application of scientific methods?)

How can he prevent it? Science will move in on man more and more closely. It will save him in spite of his protests. Technocracy is inevitable.

Now, let's direct the question to an individual: you — your nervous and muscular mechanism. Does it possess the necessary conditioning and tropism to correspond more accurately to reality? Are you able to assimilate the information you need to behave more realistically than you have in the past? Or, are your neuromatic responses like those of recording devices whose microphones have been picking up sayings in the market-places of the money-changers and in the houses of anthropomorphism?

Your next move probably contains your answer.

—Erwin Theobold, Section 1-11834

THE WATER SHORTAGE

We are gradually but definitely learning that water is our most important resource. There is no substitute for it. All the world's brains have never been able to figure out how to grow things without it — how to make steel, paper or countless other daily essentials.

As old as civilization are the remains of crude irrigation works in the Near East, India and other parts of the Old World. In Arizona, too, are similar evidences that the Indians diverted water from streams to croplands centuries before the Mormons inaugurated modern American irrigation in Utah in 1847. Ancient Rome came to its glory and grandeur partly by constructing aqueducts to bring water from afar for domestic needs and to its luxurious baths.

Here at home, the East and the South have heretofore been chiefly concerned with water for personal and industrial uses. Only recently have they shown a tendency towards irrigating acres under cultivation. In this respect they are where the West was 50 years ago. In almost all sections of the country, however, growing cities have felt the pinch of insufficient water. The mushroom-like expansion of Los Angeles would have been stifled many years ago had the Metropolitan Aqueduct not been built to deliver water from the Colorado River.

There has scarcely been a time during the past 25 years when New York City has not been constructing or planning to increase its water-supply facilities. New Jersey has virtually reached the point where it can't court more industries unless it develops additional sources of water. In most industrial states where the water is taken mainly from the ground it is necessary to dig wells deeper and deeper to find it. David S. Jenkins, of the U. S. Department of the Interior, states that in some areas *ground water is being withdrawn at 30 times the rate of replenishment.* On both the Atlantic and Pacific coasts pumping has caused intrusion of sea water in places.

The seventeen states west of the Mississippi River are becoming more water-conscious all the while, if that is possible. Their population is up to 35 million, and the far West and Southwest are the most rapidly expanding sections in the nation. They count their wealth more in terms of acre-feet of water than in gold or dollars. Soon they may be hard pressed to cultivate enough food for their

Erosion causes top-soil and silt to be deposited in such large amounts as to render reservoirs valueless.

—Photo courtesy U. S. Forestry Service

Reprinted by permission from Compressed Air Magazine, May 1955.

Floods like this indicate the necessity of an over-all design for the conservation of our vital resources.
—Photo courtesy of U. S. Navy

needs. Much of the West is in the grasp of drought, and swirling dust has returned to plague some parts of it. Lake Mead, behind Hoover Dam, is lower than it has ever been since it was filled in the 1930's.

Conservation is more imperative than ever before, and the accomplishments of the U. S. Bureau of Reclamation since it was established in 1902 assume greater importance with each passing year. Within the past twelve months the Colorado-Big Thompson Project, in its initial year of operation, is credited with having saved 500,000 acres of land in north-central Colorado from disaster through drought. The federal reclamation program now furnishes water to irrigate 125,000 farms and as many more urban and suburban units, comprising seven million acres on which 410,000 persons live. At least 1,500,000 others in nearby towns are dependent on the program, and two million more obtain their municipal and industrial water from works built by the Bureau. All the money it spends in supplying power and municipal and industrial water must be returned with interest to the federal treasury within 50 years. So far it has paid back $690 million, or about one-fourth of the total sum spent.

To help meet the mounting need for conservation, a Bureau-sponsored measure now before Congress would authorize a $900-million construction project in the Colorado River basin states of Arizona, New Mexico, Colorado, Wyoming and Utah. Another bill would provide $170 million to tunnel the Continental Divide in Colorado so as to divert water from the western slope Frying Pan and Arkansas rivers to the eastern slope. Even if all the water in the western streams were impounded, there would be enough to irrigate only a small part of the tillable land, so the region must eventually import water or stop growing.

The most logical source of additional water is the sea. The oceans cover three-fourths of the earth's surface. Various methods for removing the salt content are now known, but all are too costly for general use. With the hope of finding less expensive processes, the Department of the Interior has let contracts for 24 research and development projects. Several of them have already been completed with reportedly promising results.

Picayune Political Approach

In addition to our Rural Development Program, we in the government are turning our attention increasingly these days to the matter of water—a matter that is of much concern here in Missouri.

In many other areas of America water is the greatest limiting factor for both argricultural and industrial development.

Water tables have been falling for years. Wells are drying up. Cities are growing. Water using industries are multiplying. Year after year, argriculture in many regions lacks enough water.

Because water has been so cheap—a nickle or a dime a ton—we forget how vital it is to us.

We find it hard to realize that the average use of water per person in the United States is around 1,300 gallons per day—more than five tons. It takes roughly 3000 gallons of water to grow a pound of cotton—about 40 gallons of water to grow the feed to produce the egg—1800 gallons of water to grow the grain to make a pound of beef.

Every year we start about 100 million acre-feet of water toward fields for irrigation. Only one-fourth of it gets there to do the job. Three-fourths are lost. If just one-third of this loss could be prevented—in other words, if 50 million acre feet, instead of 25 million were saved—the value of the saving would be about $50 million a year, and the amount of water actually *irrigating* would be doubled.

Under the 1954 Watershed Protection and Flood Prevention Act, the Department is authorized—for the first time—to provide the kinds of help local organizations need and have been seeking in developing small watersheds. Local watershed organizations have already asked the Department for help in developing work plans on more than 340 small water sheds in 37 states, a highly encouraging response. The Soil Conversation Service is now going ahead with planning assistance in the first 68 of these projects.

In the Eastern and Southern parts of our country irrigation as a means of offsetting drought as well as increasing efficient production is growing rapidly.

(Continued on page 24)

POWER PLUS AUTOMATION

Things happen fast, nowadays. Persons born and reared during the horse and buggy era have witnessed more changes during the past 50 years than happened in centuries previously. Speed and power have become the watchwords; time and space factors have dwindled accordingly.

Histories relate the story of labor, beginning with simple hand tools and small output of production. The years immediately preceding the first industrial revolution, which brought the changeover from manual labor to machine work, were years of long hours and hard work. Laborers were hired by the year, and minutely regulated by law.

When machines were introduced, factories sprang up and laborers were numerous. Wages were so low that men, women and children had to work long hours in order to make ends meet. Children under 12 years of age were limited to only 12 hours a day. William Pitt, Prime Minister of England, proposed that children should start to work at 5 years of age. Alexander Hamilton exulted over how much work he could get out of the women and children in his employ. In some factories and mines, children worked 14 to 18 hours a day, often sleeping in the factories. When the law reduced labor to 12 hours a day, a howl of rage went up from the industrialists.

In 1845, an official investigation showed that at Patterson, New Jersey, women and children went to work at 4:30 a.m. and quit at 7:00 p.m. They were fined if found dirty, or if they were caught washing themselves at the factory. The fine was half their daily wage. At a spinning factory, if a worker became ill and could not provide a substitute, he or she often had to pay for the steam "unnecessarily produced," which might be half his week's wages.

They were compelled to buy from company-controlled stores at prices far above normal, and were severely punished if they failed to comply.

It was believed that long hours increased output, until a German scientist proved that after a certain number of hours, fatigue poisons forced output down, while spoilage and accidents increased. In fact, it was decided that workers could produce more if they worked less.

Management came to realize that while man was a "biological machine," designed for work, he nevertheless had feelings that must be reckoned with. In fact, his feelings affected output.

Always, work has been eulogized as a great virtue. Edison is often quoted as saying, "There is no substitute for hard work. Genius is one percent inspiration and 99 percent perspiration;" and Emerson, "the sum of wisdom is that time is never lost that is devoted to work."

Indeed, a person who has spent an active life often finds it hard to lay his tools aside. It's a habit.

Since World War II, manual labor has been replaced by power machines so rapidly, people are aware that a new industrial age is reshaping our lives. The question is, how is it going to affect millions of laborers whose skills have provided their livelihood? Outmoded factories are being abandoned and the owners are building modern ones elsewhere, nearer sources of supply and where old traditions do not act as an interference. Some companies have offered their former employees continued employment if they migrate with the company, but most of them are unable to do so.

Wherever new industries begin business in a new area, new homes and subdivisions spring into being. Incidentally, the present amount of indebtedness for housing for two, three and four unit families has risen to $75 billion.

Increased efficiency in push-button factories and mechanization point to a time when more people will be required for selling and distributing commodities, and far fewer in making things.

"Help Wanted" ads emphasize need for workers with technical skill — draftsmen, engineers, electronic technicians, chemists, but very few common laborers. Stenographers and secretaries are still in demand, and salesmen of all types, to distribute the huge inventories.

Southern states report an increase in employment, no doubt due to the influx of transplanted industries.

Coal mining employment is on the wane, partly because gas and oil are replacing coal as fuel, but mainly because of improved technology.

Mechanization Requires Power

Of course all this mechanization in industry requires power; hence, the enormous increase in hydro-electric plants throughout this country and Canada. A corresponding increase in orders for heavy duty electric power equipment is noted. Westinghouse reports, "The electric load is going up all the time, so it is inevitable that utility companies place orders for new equipment." (Huge turbo-generators and the like.)

Power from the St. Lawrence River hydro-electric project will be ready for delivery in 1958 and finished in 1959. Its capacity will be about 700,000 kilowatts. New York State Power Authority will sell the available electricity to various industrial and electric power systems, mainly to the Aluminum Company of America. Already, contracts are pending for use of 314,000 kilowatts by four companies. Rates will vary according to load factors.

Alcoa, for instance, will get its power at about 4.3 mills per kilowatt hour, if an 85 percent load factor is maintained. Costs to the other buyers with

load factors substantially less, and with added transmission charge, will run to 6 mills or better.

Load factor is an engineering term meaning the extent to which a plant's full power-producing capacity is used. In the 720 hours of a month, a 100,000 kw. plant could turn out 72 million kilowatt hours of energy, running at full capacity. That is a 100 percent load factor.

The phenomenal industrial expansion of Canada in the last decade would have been impossible without the prior development of hydro-electric power. Turbine installation stood at 10,300,000 horse power at the end of the war and now has increased to 15,000,000 horse power, which is still only 22 percent of the potential 66 million horse power available. Construction of the St. Lawrence Seaway International Rapids section will add to available power in Southern Ontario, where a shortage has developed.

In January, 1955, the weekly electrical power output of the United States reached over ten billion kilowatts for the first time—10.3 billion, to be exact.

The central industrial region, extending from Pittsburgh west to St. Louis and north through Michigan has made a 12.5 percent gain in production over a year ago, and this contributed heavily to the new record use of electric power.

The southeast region, 28.6 percent ahead of a year ago, leads the country in rate of electric output. The big contributing factor there is the heavy increase in electric consumption by the major Atomic Energy Commission plants in that area. The A.E.C. now reports it uses 9 percent of all electricity sold in U. S. as of June 30th of this year.

Union Electric System of Missouri is preparing to send their output to 250,000 kilowatts, when the $35 million addition to their Meramec plant is completed in 1958. About 70 percent of the System's 1,400,000 kilowatts of steam capacity will be in modern units erected since World War II.

Niagara-Mohawk is spending $30 million for a new 200,000 kw. turbo-generator. Consolidated-Edison will add a 300,000 kw. unit to their present 3.7 million kw. capacity. Kansas Power and Light is replacing a 12,500 kw. generator with a new 33,000 kw. one. Several companies are installing new atomic reactors to aid in production of electricity.

Power — Electric Energy Production
(In thousands of kilowatt hours)

Year	Total kilowatt hours	
1902	5,969,051	
1917	43,428,806	
1921	53,125,123	Low tide figure between World War I and 1929.
1922	61,204,457	
1929	116,747,273	
1932	99,358,929	Low figure in dirty thirties.
1940	179,906,954	
1944	279,524,691	War-time high.
1945	271,254,896	
1954	544,000,000	

There are nearly 51,000,000 customers for electrical power in U. S., including about 5 million farms.

Although farm use of electricity has increased five-fold in the past decade, the rural market is still virtually an untapped field. About 93 percent of our farms now have electricity. It has been forecast that farm use of electricity will rise to 70 billion kw. hours in 1970, from 15 billion in 1950.

In Northeastern Illinois, the University of Illinois experimentally equipped a dairy farm with various electrical devices, at a fraction of the regular cost to the owner.

Last year they used about 37,120 kilowatt hours of electricity, their bill averaged about $70 a month, but so much time and manual labor was saved, it was worth it.

Feed for the dairy stock is ground and mixed with the push of a button. Electrically heated water is used to scald the milk cans, and to wash the cows' udders before 5 electric units do the milking. Filled milk cans are placed in an electric cooler.

The barn is cleaned electrically, electric clippers and curry comb help keep cows clean. In summer, an electric sprayer helps control flies, and all year long an electric ventilator regulates heat and humidity.

An electric unloader lifts feed from two silos, and a grinder and blender prepares the feed. An electric blower then shoots it through a pipe into the cow barn, where the farmer distributes it to the cows in varying amounts. There is an electric gadget for dehorning calves, and new born calves are kept warm with infra-red lamps.

The machine shop is fitted with power drills and grinders to speed up repair work.

In the hog barn, a heated bowl keeps the pigs' drinking water from freezing in winter, and heat lamps keep the piglets warm. A small electric elevator delivers ears of corn from the storage crib to the feed lot.

Needless to say, more laborers would be required if all work were to be done manually.

Hilda the Hired-girl is Passe

In the farm-house, no doubt the mistress has lightened her own work with the use of various electric helpers.

Of course, only well-to-do farmers could go in for electric equipment on such a grand scale. Big operators have many advantages over smaller farmers, for debt, taxes, floods or even serious illness may force him to sell out when he has no capital to tide him over periods of bad luck.

We find that total farm acreage has increased, that farms are growing larger, but the number of farms has decreased by over 2 million since 1935.

Technology and science have changed the methods and technique in agriculture as well as in business, in industry, and in the home.

All over America, people have become aware of a new word. At first it was called automatization, but it was later shortened to automation. It signifies the latest advance in machine production — electronic machines that can adjust themselves to chang-

ing conditions of production, correct their own mistakes, and inspect their own product.

When machines do a man's work, that's mechanization, but when they do his work and control their own operations as well, that's automation.

Imagine a rough engine block entering an assembly line, going through 530 automatic operations and emerging a few minutes later, a finished engine! This happens at Ford's Cleveland plant. Ford has discarded its assembly plant at Richmond, California and spent $1.7 billion on a modern one at Milpitas, Calif., in which automation is extensive. Their aim is to make this 1.5 million sq. ft. factory work as one big integrated machine. The press welder will, at the touch of a lever, weld together the three pieces of steel that make the Ford's metallic floor. Automatic paint sprayers work at top speed on the car bodies. There are 7 miles of conveyor lines interconnected by "lift tables." These tables rise up between conveyor tracks and automatically carry a car body onto another track running at right angles to the first — a job formerly done with the aid of a truck and dolly.

In the carpet industry, Alexander Smith Company reports a drastic revision of policy, and as a result is pulling out of a 5 year slump. Discarding its outmoded factories sprawled over 56 acres at Yonkers, New York, Alexander Smith went south and erected a one story mill on 15 acres of land at Greenville, Miss. and a still smaller one at Liberty, South Carolina, installing plenty of automation. By cutting their labor force from 65,000 (their peak in 1948) to 2000 at the present time, they saved $4 million per month in labor costs alone. Tax amortization and big reduction of office personnel cut costs still more. A small mill in Georgia, making a new line of tufted rayon rugs, now accounts for one third of the industry's sales and a larger part of their profits.

For the Air Force's new types of fighting craft, giant new forging presses are being used, making it possible to forge larger parts out of solid chunks of aluminum. One press is a 35,000-ton giant. A still larger 50,000-ton monster can clamp its huge jaws shut and squeeze out larger pieces to be used in making the supersonic aircraft — spars, bulkheads, wing assemblies that will be stronger than anything heretofore produced, and will save time and money in production. Wing assemblies used to be formed from 18 pieces of machined aluminum, bolted together.

The Impact of Automation

Yes, automation is really getting a good start. Industries are remodeling their plants at an accelerating rate, and in each case, a number of workers are replaced by machines. The question is what becomes of the disemployed? They can't learn new skills overnight; they can't all become technicians, scientists, maintenance men, stenographers, chemists or secretaries. Many have already cashed all their savings to keep going. We surely can't let them starve, not while our warehouses, granaries, caves and even ships are fairly bursting with surplus food.

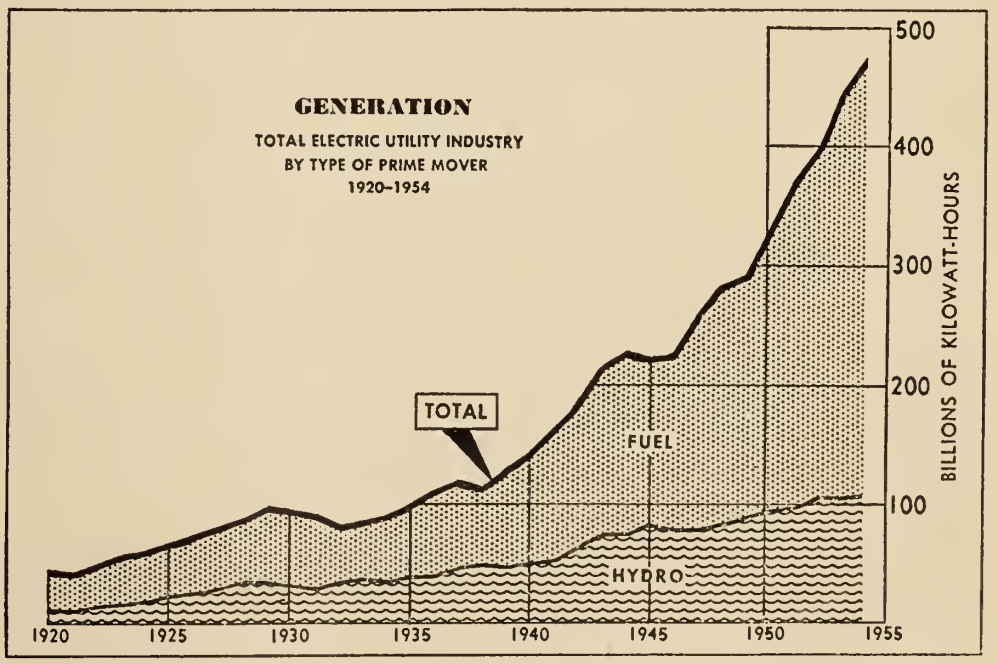
Shorter hours, shorter work weeks will not solve the dilemma for long.

The fact is, our once proud and still loudly acclaimed economic system is simply bursting at the seams, like an 8 year old boy in a 5 year old suit.

The Price System was conceived centuries ago, when production was slow enough that demand always exceeded supply. Price then was an actual measure of value. Now, with our stupendous pro-

The total output of electricity in the week ended August 6 was 10,925,000,000 kilowatt hours, topping the like week in 1954 by 20.6 percent, the Edison Electric Institute reported.

—Chart from 1954 Statistical Bulletin of Edison Electric Institute.



There Ought to be a Law

Dear Senator:

I am writing to tell you how bothered I am with the way our great country is losing out in its leadership of the world and how there should be a law passed to rescue us from this catastrophe. It seems to me the people of other countries don't pay enough attention to what we tell them. What is more, some of them say insulting things about us.

One thing we seem to have trouble with is the United Nations. From the way some of the delegates talk, I suspect some of them are un-Americans and subversives. I heard where one of them accused the United States of building atom bombs to fight wars with; but everyone knows we are building atom bombs only for peace. We wouldn't drop atom bombs on defenseless people unless we felt they deserved it.

Now that is what I am writing about. We didn't set up the United Nations so it could insult us. It should do what we say, but sometimes it doesn't. The people in the United Nations who are causing us all the trouble are foreigners. So I think you should pass a law to prohibit any foreigners from being delegates to the U. N. I think they should all be white Americans with faith in Christianity and no radical ideas. In my opinion, the American Legion could do a good job of picking people to be delegates to the United Nations. Then we would know the U. N. was 110 percent for truth and the good old fashioned American way of McKinley, Harding, and Hoover.

With the United Nations all on our side, we could then be the leaders of the world and people everywhere would have to do what we told them. That is the free democratic way.

Sincerely yours,
(Signed)
Beetal Brayne

ductive ability increasing steadily, and goods piling up, a synthetic scarcity is being maintained to keep prices up. Many items are out of reach of millions of potential consumers. Distribution is checked *because of that price tag.*

It should be clear even to the least discerning that something is radically wrong with the picture. Our social order lags centuries behind our modern inventions and industrial growth.

Politics, with its narrow, ticker-tape mind, has done nothing to alleviate the situation; in fact, it seeks to prolong it. Such necessities as better housing, social security, civil rights, aids to education, health benefits and so on, serve merely as political footballs to be kicked about in legislative halls. From the standpoint of general welfare, the recent session of Congress was a nearly complete flop.

Secretary McKay, Dept. of Interior, said in a 1954 campaign speech in Oregon, that because of our 275 billion dollar debt, Congress could not develop more hydro-electric power in the Columbia River basin. Said he, "We will have to attract risk capital for quicker development of Northwest resources."

The Columbia River system drains 180 million acre feet of water to the Pacific. Power can be produced for as little as 2.1 mills per kilowatt hour — cheaper than Niagara or T. V. A. Yet McKay referred to Bonneville Dam as "subsidized power." His own Department had previously reported that Bonneville was actually $65 million ahead of schedule in repayment of principal and interest to Uncle Sam. Bonneville Power has paid a gross sum of $350 million into the U. S. Treasury since Federal power sales began.

Hells Canyon, on the Snake River, is the finest natural hydroelectric power site left in North America. The Administration plans to surrender this site to a corporation which charges the highest rates in the Northwest. Prominent Republicans called a bill for a federal dam at Hells Canyon 'creeping socialism' and a threat to our American Way of Life.

The St. Lawrence Seaway project was bitterly opposed in Congress for years because railroads saw in it a threat to their freight carrying monopolies. When Canada decided to develop it with or without our partnership, Congress authorized a limited version.

What we really need is a complete inland waterway — the Continental Hydrology, designed by Technocracy, that will develop all potential electric power and provide adequate transportation to all parts of the Continent, thus relieving wasteful shipping bottlenecks and traffic congestion. However, within the framework of our antequated Price System, this plan will never fully materialize.

Technocracy suggests that if you are fed up with graft, wanton waste of our precious natural resources, and other symptoms of a dying social order, you are ready to acquaint yourself with Technocracy's scientific design, that will automatically lift this Continent out of its state of inefficiency and on to the 'assembly line' of progress toward a better life for every citizen.

Good housing, proper food, health care, high standard education, lifelong security are yours when America turns to Technocracy.

—Henriette Phillips, Section 1,11140

TECHNOCRACY -- WHY?

Technocracy's Director-in-Chief, Howard Scott, warned in 1950 that 'The next five years will be the most decisive in the history of man; and the next ten years the most conclusive.'

Mechanization and Automation are spreading so rapidly in the industries, offices, mines, and farms of the United States and Canada that three brand new magazines have commenced publication to keep track of the trend . . . an article in one of them states that:

> "Electric light bulbs today are blown in one plant on several automatic machines at a rate of 90,000 per hour. Some 230 employees man the plant. With 1927 methods and machines, some 75,000 men would be required to produce this quantity per hour, and with 1934 techniques some 4,000."

This was seriously cited, believe it or not, as proof that mechanization makes jobs! If true, the only jobs we can find that mechanization has created are those for the editorial staffs of these same three magazines! Technological disemployment rises regardless.

Technocracy salutes America's technologists — we're in favor of more automatic machine tools (like the new "machine to make machines to make machines" — and that's quoting the September, 1954 issue of *Fortune,* not the late Gertrude Stein), also more continuous coal-mining machines, and more cotton-picking machines. These mean freedom from toil for more Americans now, plus more potential abundance for the future. But we'd like to point out that the machines don't buy groceries, nor automobiles. . . .

There's the crux of the problem this Continent alone faces: purchasing power. Technology, which has made the U.S.A. the No. 1 nation of the world and which can make this the greatest Continent on earth . . . technology is invalidating and smashing the Price System's scarcity and labor man-hour basis for purchasing power in the form of money (debt) for work, as technology takes over jobs at a more rapid rate than ever before in our history.

Our expanding industrial capacity — more than doubled since 1940 — is the other consequence of industry's need to cut man-hour costs by substituting more automatic high-speed machinery. Yet production continues to be held down to an average of less than 15 per cent of capacity . . . enforced scarcity. Yes, the mills of the Price System grind exceedingly slowly . . . too slowly!

Most Americans are coming around to the realization that something is basically wrong with the economic set-up here at home — with insufficiency and insecurity on the march, despite greater industrial capacity for potential abundance — and, most Americans are likewise questioning (at least privately) the sanity of an increasingly reckless and menacing foreign policy, foisted upon us since World War II by two supposedly differing regimes.

Americans are wise enough to have long since rejected communism and socialism — for this country and this Continent — as well as fascism and all the other foreign political philosophies, all opposed to and inimical to the way we live in America's Power Age civilization.

Yet, the earlier-imported ism branch of the Price System that we are still trying to get along under, monopolism, is not doing well by us either, turning out to be as odious and unsuited to our technological productivity and potentialities as those obviously un-American alternatives.

So, the average American is puzzled, worried, and frustrated (no wonder so many are refugees from reality . . . escaping via the bars, the race tracks and bleachers, comic books and lurid pocket books, driving hot rods, mumbling to themselves on the street, hypnotized by vacuous television programs, or worst of all, just 'can't take it' any longer and either end it all, end up in a mental ward, or plain go berserk).

The body politic is sick, and it's already begun to drag down our social and individual stability. This growing contradiction between the potential fulfillment of abundance and security for all Americans from the fruits of their science and technology and the dead hand of a decaying system of differential advantage, workable only in an era and area of scarcity (i.e., hand tools and human toil), this is something new. This conflict — of technology vs. toil, of potential abundance vs. artificial scarcity, of the standard unvarying measurements of science vs. money, debt, and opinion 'value' — first occurred in America in 1919-20 and has been accelerating ever since. No other area on earth faces such a condition, such a problem. Nowhere else do they have enough technology or engine hp. to render ineffective the ancient handed-down rules of the game of the status quo ante.

That is why none of the imported Price Systems —communism, socialism, liberalism, conservatism, cooperatives, fascism, guild corporatism, or more monopolism — can solve the problem here or save the system on this Continent. (If it were worth saving!)

The utter futility of the political method of approach — whether it be ballots or bullets; radical, revolutionary, or conservative; signing (there ought to be a law) protest petitions or 'writing your congressman' — is becoming more plain every day. But what else is there? — is the unspoken comment of

more and more Americans . . . is there something else, something better, with some sanity and order, yet all-American? you want to know. The answer is: Physical Science, the court of last resort for modern civilized man.

First of all, America's problems are real, physical, technological. 'Technocracy makes one basic postulate: that the phenomena involved in the functional operation of a social mechanism are metrical.' (Measurable, in other words, in physical units such as kilowatts, tons, miles, etc.) Technocracy defines science as 'the methodology of the determination of the most probable.' (In everyday language, prediction in its most accurate form.) America's problems, being measurable, are *not* political, financial, moral, or the like, so the problems (some listed in the following) cannot be solved now or in the future by application of more politics, etc.

Technocracy states that America *does* have a war to fight — but it is on this North American Continent, the only war worth fighting for and living for: the war to eliminate toil, scarcity, poverty, disease, accidents, ignorance, and insecurity. Having more than 50 percent of the world's industrial capacity on this continent and close to that amount of the natural raw material resources — on a land area only 10 percent of the world — we can win this war with our magnificent technology. But it's too big a job for business or politics to attempt; that's why they just aren't interested.

Technocracy is proposed not only because it is parallel with our modern technological way of life and our technological problems, but in order to keep our present way of living *going* when the Price System can no longer be enforced here. Technocracy, note, has been 'on the sidelines' growing in membership since its original formation in 1919 and incorporation (not-for-profit) in 1933, waiting — not only for the Price System to collapse, but for you, the American public, to 'catch on' and wake up to the game that is being played against all of us — the imminent threat to our historically built-up and technologically-operated Power Age standard of living and security (limited as they are for most of us) which will place us in jeopardy of our very lives when this house of financial-political cards finally gives it up as a bad job and closes down (or, in its death throes, fulminating the start of atomic-hydrogen war to end all wars — and all people) in the quicksand muck and mire of scarcity values upon which it was built.

Technocracy's proposed design, its unique solution for North America's unprecedented problem, calls for the *scientific* direction of science, the *engineering* direction of our 6 billion hp. of powered technology and the conservation of our continental resources (boldly contrasted with the politico-pecuniary-opinion waste and mis-use of science, technology, and resources). Then and then only will human beings be freed of stultifying regulation and arbitrary authoritarianism over their individual persons and security by other human beings (political government) and freed of the interference-controls of price (debt and money: taxes, banking, profits, wages, rent, charity, insurance, etc), since 1920 holding back technological pressures for an abundance of goods and services on this Continent.

As far back as 1933 in Chicago, Technocracy was saying that Americans would have to decide whether it will be Science or Chaos. Technocracy's Director-in-Chief, Howard Scott, warned in New York in 1950 that "The next five years will be the most decisive in the history of man; the next ten, the most conclusive." In 1954, Technocracy stated on the Pacific Coast that the U.S.A. and Canada are close to the perilous impasse where it is either Peace or Prosperity. . . .

Are you one of those millions of Americans now puzzled by the march of events? If so, we Technocrats — a continent-wide voluntary organization of American citizens like yourself — invite you to join Technocracy now and help install 'The Technate of North America' which will be the greatest achievement in all recorded history.

Los Angeles Times, June 26 (UP) — Industrial automation is taking a giant step forward in a Pittsburgh area rolling mill with robot installations that may eventually eliminate 20 percent of the mill's workers.

Morrow Products, Inc., Pittsburgh firm installing the devices, would not name the mill. But an officer said the gadgets, infrared photoelectric controls, will eliminate table reversing operators, table control operators and automatic shear button operators. R. D. Morrow company vice-president, said:

"In the future, we will be able to eliminate any man doing a sequence job . . . (including) almost every man but the maintenance and control operators. And we can do a better job."

Morrow's firm also has developed an infrared television unit that could be used to position barges or railroad cars for unloading despite fog, smoke or steam.

Sugar gluts will grow. World output in 1954-55 will hit a record 40.3 million tons, federal analysts predict, despite Cuban cutbacks. What to do with an abundance has been the bugaboo of 'free enterprise' for some time. If scarcity can't be maintained any more, why not distribute our abundance?

A loom-like machine, the nearest thing yet devised to a mechanical spider, is now weaving a web of wire, cord and string in the string bean fields of the Oxnard plain.

This automatic operation saves labor costs on a traditional high labor crop.

A job that once required 25 to 30 hands, stringing and tying the complex trellises, now takes only five men and much less time, according to grower Frank Vujovich, who recently put the machine through its paces on 17 acres of string beans land west of Oxnard, California.

The RESEARCH BULLETIN

NEWS ITEMS OF SIGNIFICANCE QUOTED FROM THE NATION'S PRESS

The Coal War

What the cotton gin did for cotton, a new push-button mining machine will do for coal.

The machine has been undergoing secret tests for several months in a mine at Deerfield, Ohio. A formal report on its performance is being withheld until the American Mining Congress meets (May '55) in Cleveland.

However, a model of the device was unveiled at a coal research conference last April, and a source close to its development said it can raise soft coal production to 50 tons a man-day.

Since the average man-day output is now 8½ tons, *that would mean an increase of almost* 600 *per cent.*

Should such a machine come into general use, it would write a radically different story of the history of the coal industry and of coal, a commodity in which labor historically accounts for two-thirds of the cost.

When the machine is ready for commercial use, *one man will operate it from a push-button remote control box* slung around his neck.

During tests, it was reported, the machine reached an output of up to six tons a minute. The big problem with this, as with earlier mechanical miners, is how to keep it from burying itself with its own wake of coal.

Push-Button Railroading

Sorting out or classifying freight cars at major junction points is a monumental job for every railroad system. At Bensenville, Illinois, 17 miles west of the Chicago loop area, the Milwaukee Road has transformed its flat switching yard into a 70-track retarder yard boasting the most modern equipment. There cars are classified not only according to the lines that are to receive them but the yards of the individual railroads as well.

It is the world's largest facility of its kind, using both route-switching and retarder-speed control. Designed to classify 3600 cars in a 24-hour day, it has not yet been pushed to capacity but has handled 3256 in that interval.

While electropneumatic yard switches and retarders aren't new to railroading, the Bensenville installation represents the largest development in the field. Its tracks, each capable of accommodating from 52 to 102 cars, have an aggregate capacity of 5311 cars. With the additional tracks and facilities, its total capacity is 8823 cars.

At Bensenville much is accomplished by few men — specialists who have their fingers on the heartbeat of the intricate electropneumatic system. At a glance out of either the switch or a retarder-control tower one may see as many as twenty "cuts" (a car or group of cars cut off a train being classified) moving along on as many tracks at as many rates of speed to be coupled without jarring onto a like number of trains being made up for different destinations. *During that survey only one man* — the switchman uncoupling cars on the "hump" — may be visible in the entire yard. *This is a far cry from the days before remote-control and retarding devices when switches were thrown manually and a brakeman rode each cut to its appointed track.*

Another Victory by Science

New York — One day toward the end of this month (June '55) a smallish, bulbous-bowed craft will up anchor and steam slowly north-eastward from Newfoundland. It will begin a new phase of the mission launched some 450 years ago when Columbus' Santa Maria linked Europe and America.

From coils in huge tanks in her deep hold the Monarch, a craft of British registry, will unreel a 2,000-mile cable. It will provide the first telephone wire link between North America and Europe — a development freeing trans-Atlantic telephone conversations from static and other electrical caprice which sometimes garble and interrupt radiotelephone, the present way of talking across-ocean.

While the new line will be the first cross-ocean telephone cable, an undersea cable suitable for telegraph service between the U. S. and Europe has been in continuous operation since 1866. It's only in the past five years, however, that scientists have licked the problem of producing the kind of equipment suitable for running 'voices' under the ocean on cables.

If Not Sooner

Chicago, July 17 (UP) — Prof. Dallas W. Smythe of the University of Illinois predicted at the 50th annual meeting of the Advertising Federation of America that "the bulk of American industry will be automatic inside the next 20 years."

TV Views Traffic

Milwaukee Journal, June 20 (Detroit, Mich.) (AP) — Before long Detroit traffic policemen may walk into overstuffed chairs in front of a television set and go to work.

And from there it will be their assignment to see that traffic keeps its booming (55 mile an hour speed limit) pace on expressways. But tickets for speeders and zigzaggers still will be for the motorcycle boys.

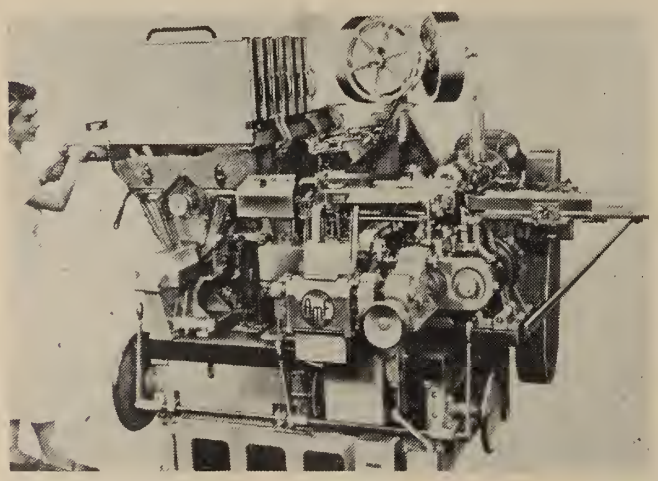
To demonstrate traffic control, two closed circuit television systems are being trained on zooming traffic along the expressways. . . . If it works — and no one is certain yet that it will — up to 24 TV cameras may be mounted overhead about 800 ft. apart on the John C. Lodge and Edsel Ford expressways. They would overlap in vision and swing around in the opposite direction at the push of a button.

The Michigan Bell Telephone Co., which set the system up on a 30 day free trial for the city, explains it this way:

Only four receivers — two for each expressway — would be needed. The picture would flit from camera at eight second intervals right down the length of each expressway. A push of a button from the monitor room would stop the sequence or whip a camera around.

When an accident occurred on the expressway, signal lights at every entrance would flick to red — stopping the innocent driver from entering and bogging down in honking traffic. From the monitor room, a quick radio call would dispatch police cars and a wrecker to the scene.

. . . The telephone company readily admits it is experimenting, but says that it should work in the rain. Windows directly in front of all cameras have windshield wipers in constant motion when it's wet. . . .



This machine turns out 9000 packs of cigarettes an hour. —Photo courtesy Steelways

Automatic Rolling Mill

Los Angeles Times, July 5 — . . . Dr. Dean E. Woolridge Corp., Los Angeles gave his talk "The Future of Automation," on the campus of the UC of Berkeley as part of the University Extension course on Automation in Business and Industry.

In viewing how soon such goals will be reached, the speaker had this to say: "If companies do their jobs right, we will have extensive automation within the next eight to ten years."

It all depends, Dr. Woolridge said, on business attacking automation problems through the completely integrated "system concept" rather than depending on various automatic control jobs being accomplished by individual "black boxes" for different purposes.

The similarity between military electronics and business automation is so profound, the speaker concluded, that business and industry can cut decades of time and millions of wasted dollars in automation research and development by taking advantage of the lessons learned in the trial and error accomplishments of our automatically controlled airborne and ground military weapons.

(*The 'sucker' public has already paid the tab.*)

Memory Multiplied by 163,840

People sometimes need a string around their finger to help their memory. Telemeter's new giant Mnemotron (nee-moh-tron) has no need for string . . . as each of its 163,840 tiny magnetic cores will remember one basic unit of information forever.

The Mnemotron is the largest high speed unit ever built. To get an idea of the size and speed of the Mnemotron, it can memorize and recall the equivalent of *over fifty full length novels in less than one minute* and yet any item of information that may be fed into the Mnemotron *will stay there forever* regardless of mechanical shocks or power failure.

Amazing Aircraft Development

A new development gives position of aircraft instantly, automatically, and with accuracy never before attained. Tacan (tactical air navigation) provides both distance and bearing information in a single "package" about the size of an ordinary shoe kit. This has never been done before!

By *integration of functions,* and miniaturization into one small unit, Tacan represents a great stride in aircraft navigation equipment. Add extreme accuracy, and adaptability to varying installation conditions such as on shipboard or for mobile land equipment, and you will know why Tacan is described as one of the most significant advances in many years.

Then There Were Nine

Farmers in the Everglades area have constant battles to fight insects, plant disease, water control and cost of labor. Science and engineering have done much to correct these problems.

All kinds of weird-looking contraptions have been developed to replace labor. One of the latest to make an appearance in the Glades is a radish-picking machine. Jacob Graber and Sons, of Belle Glade, one of Florida's largest radish-growing concerns, put nine of these machines to work. Officials of the firm explained that the nine picking machines have replaced 160 laborers who previously pulled the radishes by hand.

It has been estimated that the machines, considering the volume of work turned out, have saved the firm $1000 a day in labor costs. And to top it all off, the machines do a better job of topping the radishes.

The Way to Move Mountains

Pittsburgh, July 19 (AP) — The nation's biggest coal producing company expects to begin operating history's largest power shovel late this year at a strip mining operation in Ohio.

The 12-story high power-machine now is being assembled at Pittsburgh Consolidation Coal Co.'s Georgetown works near Cafiz.

The coal company designed the machine, hoping to reach coal reserves deep in the earth which cannot be mined economically by present methods.

The shovel is built to scoop up 100 *tons of earth in a single lift.* The biggest shovel now in existence will lift 72 tons of earth at once.

The super shovel will not do actual coal digging. Its purpose is to move mountains of earth covering deeply buried seems of coal. Smaller shovels then will mine the coal.

Rapid Crop Dehydrator

One of the largest forage crop dehydrators ever built, with a drum almost 11 feet high and 79 feet long, is now under production by the Heil Company of Milwaukee. The drum will expel more than 15,000 pounds of water an hour from damp grasses.

The machines handle alfalfa, corn fodder, soybean hay and other agricultural crops. The entire harvesting, drying and storage cycle requires less than an hour. Except for some manual labor (which can be eliminated) for sacking the finished product, the entire operation is automatic.

More and more Americans are becoming city dwellers with 99 million of us now living on 1 per cent of the nation's total land area. This is one of the reasons why we need urbanates as designed by Technocracy.

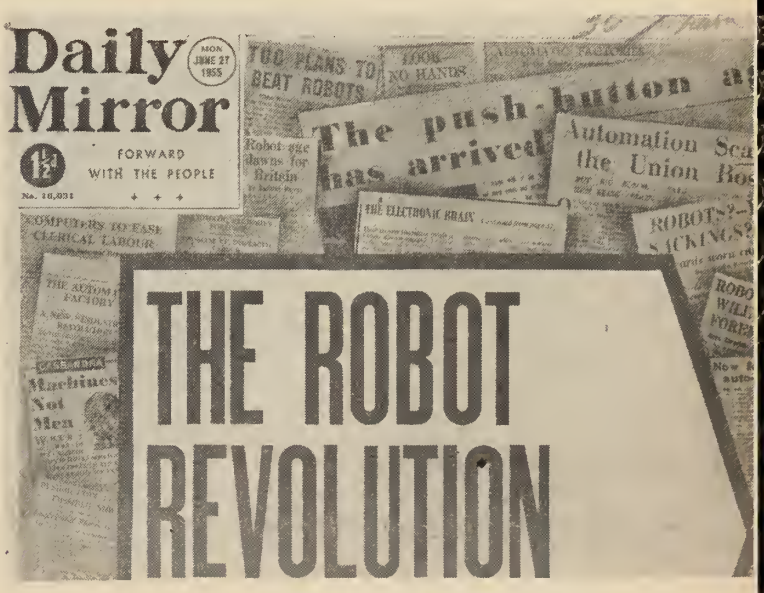
The Time is Now

Automation is not just an exclusive American product. The rest of the world are feeling its impact upon their economies as well as we are. And to use the words of the English newspaper, the *Daily Mirror*, the "robot revolution" cannot "be tucked away under a work-bench and be forgotten."

The *Daily Mirror* recently ran a series of articles which its editors gave the title of "The Robot Revolution." Full page (including the front page) spreads were given to the subject of automation. (The *Daily Mirror* claims a circulation of ten million daily readers.) In one of its spreads the DM stated in large, bold type, "Britain is on the verge of an industrial revolution that will change our life. The change can bring mass happiness or mass misery. Which is it to be! Automation is the name of the new industrial magic. It means the replacement of workers by thinking machines." Then the article goes on to mention past history when rioters wrecked machines which they thought would wreck their lives. And it adds, "We can't afford to muddle it this time."

Instead of the usual whitewash of the social significance from the use of automatic machines and the trend of more automatic factories, the content of the article does recognize the fact that the installation of automation does displace workers. After giving many examples of the number of jobs that automation will replace, the context doesn't conclude with any such asinine inference that machines make or create jobs. It does not put automation in the far future as do most American writers. "And do not imagine that it (automation) is something that will not happen in your lifetime. It is happening already."

One wonders how long we in this country and on the North American Continent will be able to 'muddle through' without a design to meet the pressure of technological events.



—Photo courtesy Daily Mirror

Brain Speeds Reports

Monsanto Chemical Company of St. Louis is speeding up its accounting procedures with the receipt of the first 702 electronic data processing machine to be delivered by International Business Machines Corp.

Monsanto said it will use the 702 to prepare 1,200 manufacturing cost reports each month and the company's monthly financial statements. The machine will be able to prepare a cost report in 30 seconds, compared with the two hours it takes an accountant. The monthly financial statement will be prepared in 2 hours compared with 300 hours manually.

Automatic 'Supervisor'

An electronic central control system that automatically supervises starting and stopping of as many as 40 different groups of remote operations without special wiring is being marketed by IBM.

The electronic 'supervisor' can be programmed to turn on and off, at present time schedules, lights, motors, industrial processes, air conditioners, pumps, heating systems, etc. Or it can open and close valves and control scores of other operations. All are controlled from a central panel.

Picayune Political Approach

(Continued from page 14)

Supplemental irrigation often requires a substantial cash outlay. Under a recent amendment to the Water Facilities Act, thousands of farmers are now able to obtain loans for improving their farm facilities.

Our efforts to solve problems of water supply and management will not stop with the Small Watershed program or the amendment to the Water Facilities Act. There are many things we need to know about water that we do not know, and *research* can give us the answers.

We need to know how water in certain soils responds to various crops, and various methods of management. What is the best time and method of applying irrigation water? Are there more efficient and economical ways to keep run-off water under control? How can we locate and control sources of silt and sand that choke up our streams and reservoirs and cover productive farm land?

Can we find ways to control evaporation? Can we develop cropping systems that will enable us to use the maximum quantity of rainfall in high value crops? Can we find profitable alternative crops for lands in the Great Plains diverted from wheat that will enable growers to do a better job of controlling erosion, conserving moisture and maintaining soil productivity?

—Excerpt from Sec'y Benson's speech at Joplin, Mo., July 12, 1955.

(*The foregoing points out the immediate need for Technocracy's design of a Continental Hydrology.*)

Auto Row Consternation

Los Angeles Times (Wash., July 31) (AR)—A Senate Interstate Commerce Subcommittee said today it was greatly concerned over the record number of unsold automobiles and high dealer mortality in the industry.

"Previous to 1955 the record number of new car stocks (in field and in transit) was reached May 1, 1954, at which time 607,275 unsold new cars were reported by the Automotive News," the subcommittee said.

As of May 1, 1955, the same source reports 757, 856 such units. As of June 1, 1955, there was 848, 498.

The report said it was significant that despite the booming auto production of recent years, dealer mortalities have increased by about 200% since 1951.

The subcommittee said it had been laying the groundwork for hearings and possible recommendations for legislation. But it explained it has been proceeding carefully because "the manufacture and distribution of automobiles is probably the most important single industry in the economy of the United States."

(*According to The Cleveland Trust Co. Business Bulletin of August 19, 1955, 'the new high records of automobile production in 1955 have been accompanied by new peaks in the purchase of cars on installment. At the end of May the amount of installment debt outstanding on automobile paper was $19,985 million, this being the largest in history.*

At the close of 1929 the amount of automobile installment debt outstanding was nearly $1.4 billion.

According to the latest survey of consumer finances, conducted by the Federal Reserve System in cooperation with the Survey Research Center of the University of Michigan, about 62 percent of the "spending units" (roughly equivalent to families) who purchased new cars in 1954 did so partly on borrowed money, while the remaining 38 percent paid full cash. This is just about the reverse of the situation in 1947-49'.

If the automobile industry is indicative of other industries, it would seem that business is in an unstable condition.)

The Census of 1950 showed that about a million and a half farm families in this country had total cash incomes of less than a thousand dollars a year, while another million and a third had total cash incomes of between one and two thousand dollars. Here are millions of our fellow citizens living on farms too small or too unproductive to provide a satisfactory living.

Congress passed with out debate a $31.9 billion 'defense' appropriations bill. Total defense department funds voted for the fiscal year represent an increase of $3 billion — more than 10 per cent — over appropriations for the past fiscal year. If peace came, what would prop up the present economy?

Giant Tree Crasher

Pahokee, Fla., — A giant jungle destroyer, traveling on the largest rubber tires in the world, has been purchased by a Pahokee contractor for major land-clearing work along the Florida-Georgia line.

Designed to uproot heavy trees and underbrush with push-button ease, the six-wheeled Goliath has three times the wallop of an M-24 tank, yet is so light on its feet that it can roll over a pocket watch without damaging it.

Wheels of the machine are spectacles in themselves, each measuring four feet wide and 10 feet tall. That's half again as wide and as high as the average doorway.

Observers say the unit may well cause major changes in current-day land clearing practices.

In operation the machine looks like a huge, magnified beetle searching out trees of all sizes and crashing them to the ground. The operator, perched in a balcony-high cab and fingering trigger-sensitive electric switches, maneuvers it directly into a large-size tree with the blade raised about 10 feet in the air. Almost without hestitation the tree bends, strains, then lifts its own roots as it crashes to the ground.

For smaller, medium-size trees, the machine goes in with its blade lowered, uprooting and carrying away trees and underbrush in one continuous operation.

So powerful is the Crasher that during tests it was made to push, checker-board style, *a pile of metal weights equivalent to 75 automobiles.* This task, also, was performed quietly, smoothly, almost monotonously.

What makes the machine so powerful, yet so light upon its feet?

Instead of receiving power from one central drive, each of the six mammoth wheels has within its rim an individual electric motor and gear reduction. These motors are driven by generators which, in turn, are driven by two giant diesel engines near the center of the unit.

Secret of the light "weight" of the 120,000-pound vehicle lies in its tires. Because of their gigantic dimensions, and because they can operate with air pressures as low as five pounds, the actual per-square-inch weight of the machine upon the ground is about the same as that of a walking man.

Such an extreme degree of "flotation," and the powerful motors for each wheel, make the unit particularly well suited for work in swampy or sandy areas where other equipment would find it impossible to operate.

Another application which probably will develop for the machine is that of transporting heavy loads over rough terrain. The top of the Crasher forms a convenient platform 39 feet long and 11 feet wide which, LeTourneau engineers say, *is capable of supporting more than 200,000 pounds.*

Resembling a rubber-tired flatcar, except much larger, the "Tree Crasher" is shown on the testing grounds of its manufacturer, R. G. LeTourneau, Inc., of Longview, Texas. Compare size of the vehicle with operator, leaning out of cab to receive directions. **—Photo courtesy R. G. LeTourneau, Inc.**

Facts in Brief

What we are seeing in this country today is a race between rising labor costs and falling machine costs. The more the labor costs are pushed up, the more money is spent on machines that make more goods in less time and with fewer hands. It will take more than a guaranteed annual wage to solve this problem.

Well, the steel workers received another increase in pay, but, as is always the case, the steel industry will increase the price of its products. This time the increase will amount to about $7.50 per ton. At the present rate of production of over 2 million tons per week, this increase in the price of steel will amount to a tidy sum, won't it? And we will give you one guess as to who will pay for it.

A recent study indicates the production of electric energy should climb from 389 billion kilowatt hours in 1950 to 1,400 *billion kilowatt hours in* 1975 . . . *a rise of* 260 *per cent.* You can bet that the Price System will be long gone before this happens.

Brazil's Coffee Institute will carefully regulate the arrival of coffee beans at Brazilian ports from coffee-growing areas to assure that monthly availability of supplies will coincide with market needs. Wonder where they got the idea?

Today each steelworker on the average is turning out more steel every hour than ever before. Five million more tons of steel were produced in the first three months of this year than in the same three months last year, and there are 40,000 fewer employees in steel today than there were two years ago. How's that for machines creating jobs. And isn't labor fighting a losing battle?

Today, we, as a nation, are facing a serious traffic situation. There is now one car to every 700 feet of every lane in each direction of every street and highway in the United States. Can you imagine ration tickets as to the time of day you would be allowed to drive your car. Aren't we going to be forced to apply the scientific method to our social order whether we like it or not?

The national debt is greater than the assessed value of all property in the nation. Latest figures show that the national debt is about $276 billion while assessed valuation for tax purposes of all the nation's property is given at $240 billion. From concepts of property rights come delusions of grandeur. With all these Price System incentives, we end up owing more than we own.

According to automobile dealers across the country, they doubt very much whether they could have sold as many cars as they have without the assistance of easy credit terms from banks and finance companies. Installment credit has been given a tremendous jump by the purchasing of autos on time. What about some figures on repossessions and car dealer failures?

Appliance dealers have been among hardest hit in retail field this year. . . . Dun and Bradstreet reports increase in failure rate of 53 per cent for appliance dealers, with liabilities involved increasing 227 per cent. Collection difficulties and inability to move high inventories were paramount reasons behind rise in failures and insolvencies. Just where is the prosperity we hear so much about?

How much income does a family of four need these days for decent, healthful living? After a thorough survey, the University of California's Heller Committee states the startling fact that each family needs $469 a month to provide a "reasonable and acceptable" standard of living. In this land of 'free enterprise' there must be a large percentage of us who are getting tired of being fed a steady diet of liberty and freedom.

CHANGE OF ADDRESS

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TECHNOCRACY

North America's Only Social Dynamic

WHAT?

Technocracy is the only North American social movement with a North American program which has become widespread on this Continent. It has no affiliation with any other organization, group or association either in America or elsewhere. The basic unit of Technocracy is the chartered Section consisting of a minimum of 50 members and running up to several hundred. It is not a commercial organization or a political party; it has no financial subsidy or endowments and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are $6.00 which are paid by the member to his local Section. Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHEN?

Technocracy originated in the winter of 1918-19 when Howard Scott formed a group of scientists, engineers, and economists that became known in 1920 as the Technical Alliance — a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934 Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundation of the present Continent-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHERE?

There are units and members of Technocracy in almost every State and in every province in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces. Members of Technocracy are glad to travel many miles to discuss Technocracy's Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHO?

Technocracy was built in America by Americans. It is composed of American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this Continent. Membership is open only to American citizens. Aliens and politicians are not eligible. (By politicians is meant those holding elective office or active office in any political party.) Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher, or housewife—so long as you are a patriotic American—you are welcome in Technocracy.

The TECHNOCRAT

Offering to the American public a medium by which it can learn the facts regarding the transition period in which we are moving toward a New America of technological abundance.

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September, 1955 Whole No. 175

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'The TRAGEDY of ERRORS'

The continental United States no longer has the resources to maintain the profligate consumption of raw materials by private enterprise at profitable prices at home and also conduct an unlimited war of indefinite duration, supported only by allies suffering from resource malnutrition. It is high time that this country and this Continent formulate a national policy and a strategic implementation of that policy which conform to the technological operation of the geography of this Continent. Unless we do so soon, we will face the tragedy of our errors.

—Howard Scott

— SECTION STAMP —

DEC. '55

The TECHNOCRAT

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- Critical Comments

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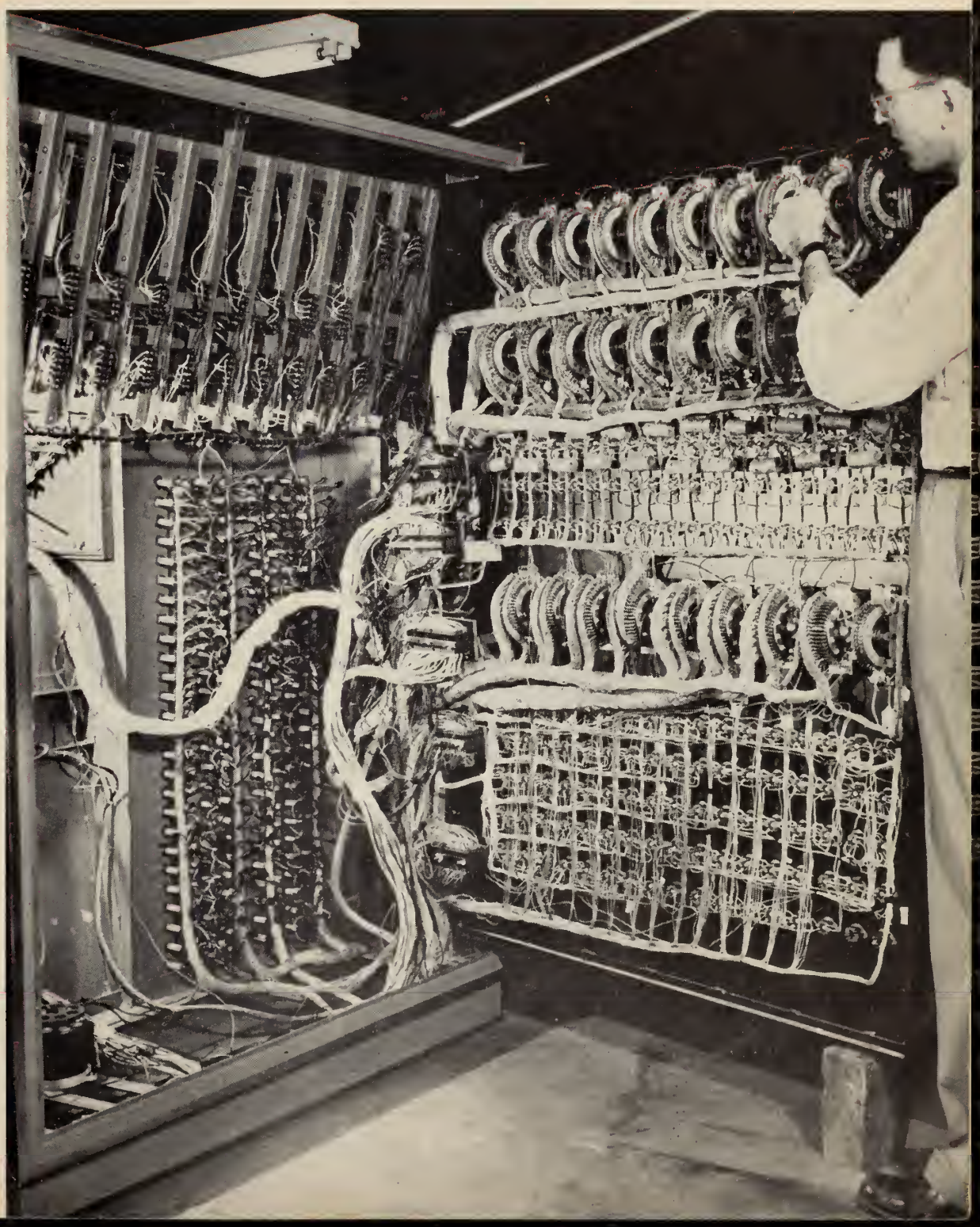

The TECHNOCRAT

DECEMBER, 1955

Editorial

OBSTRUCTION MUST STOP!

The witch-hunt which we have been witnessing in these postwar years has been imposed especially on men of learning, including the scientists. It has reaped a harvest of suspicion and distrust which is being manifested by the decline in the number of student graduates of science, engineering, and technical fields. This decline since 1950 has been so great that Price System leaders (business and political) are becoming alarmed at the realization of what this shortage of trained personnel will mean to their profits and political prestige, since wealth depends not only on physical resources but also the application of scientific knowledge and technical know-how, without which a high energy civilization cannot be sustained.

It is therefore imperative that a greater and ever greater percentage of young Americans study and train for technical occupations. But in these postwar years, we have seen scientists ridiculed, misrepresented, and condemned as suspect, until our youth has 'fallen victim' to this virus of ignorance. Small wonder there is such a decline of technical graduates!

Even the late Dr. Albert Einstein in his latter years is reported to have said that perhaps it would have been better for him had he become a plumber or a peddler. This expression of disgust from such a leading scientist is evidence of the results of this ridicule, which no doubt has influenced the decision of many youths with scientific ability to become 'plumbers or peddlers.'

The citizens of North America must understand and realize that the destiny of this Continent is predicated on scientific research and engineering techniques; that science cannot expand and develop if hampered by the encirclement of ignorance and superstition. America needs technically trained personnel; and the youth of today will be the personnel capable of operational leadership in the new social order of function.

It behooves us to immediately release our scientifically trained teachers from the badgering tactics of political opportunists so that they will be free to encourage, teach and train the prospective scientists and technicians among our youth. Events are the determining factor which places the responsibility on those who are intellectually capable and technically trained for leadership in a technological age.

North America has outgrown the concepts of scarcity and is now ready to expand into concepts of abundance which will bring the freedom of economic security. Technocracy stands ready with the blueprint by which America can move into this new social order of functional methodology, leaving behind the bondage of old concepts of poverty, scarcity, ignorance and superstition. Only Technocracy can give youth a worthwhile goal and direction, as Technocracy's design is for the future and youth belongs to the future. Join Technocracy now!

When the youth of America presents its ultimatum, let no minority, racial, religious, or economic, attempt to bar the highway to the New America, for if it does, the youth of this Continent will concede nothing short of that minority's annihilation.

—Howard Scott

December, 1955

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'BLESSED ARE THE POOR'

'Give to the poor' is the mandate of the Christian religion. Technology is making it increasingly more difficult for one to practice this aspect of his religion; for, technology tends to eliminate poverty as a prevalent feature of the community.

For as long as the human race has records of any kind, there have been poor people. And the philosophers — Buddhist, Christian, Judaic, Islamic, and pagan — all had to accept them into their theories of society and justice and to apologize for them. Usually the 'apology' took on the form of an explanation of why they *should be* poor. In summary, it simply amounted to the proposition that the poor were undeserving, or else they wouldn't be poor. And, being undeserving, they were legitimate prey for all forms of predation and other mischief at the hands of those who were deserving. Thus, the poor have been the despised people of all societies and theirs have been the lot of toil and chattel.

Throughout the period of history (and it must have extended much farther back than that), the poor have been preyed upon by those who were in positions of advantage. They were made to work that they might produce for others. They were made to go without that others might have more. They were made to suffer indignities at the hands of their 'superiors.' They were left to die when they became a deficit to their masters. The same principle applies today — in lands of professed piety more so than in others — but the effects have been relieved wherever technology has been measurably developed. Technology takes over the jobs of toil and it produces so much that some of it is bound to slop over into the hands of the poor. As a result, poverty of the lowest order is almost extinct on this Continent, except where clerical fascism is most conspicuous.

A sort of charity toward the poor has been spawned in most societies. In the slave-owning societies it was expedient to feed the slaves fairly well in order to sustain them in a working condition. When slaves were abundant and cheap, this concern was less manifest as, for example, at the time of the Roman conquests and during the Crusades. It was also expedient for the rulers to maintain applauding masses of people in preference to complaining mobs; and, for this end, 'bread and circuses' were occasionally provided for the 'rabble.' There is also a natural tendency for the less fortunate to feel pity for those still less fortunate than themselves and for the former to make small contributions toward the relief of the latter. Most religions have fostered the belief that, if one gave to the poor, the giver would build up credits for himself in the hereafter.

The chicanery was not all on the side of the more fortunate, however; for, the recipients of charity also tend to promote various schemes to enhance their own take. Some have donned the guise of extremely miserable unfortunates so as to evoke the utmost in pity — and alms. Others have posed as 'wise men' or as dieties in disguise and have promoted the idea that the welfare of your soul requires that you give them handouts. Others have been able to work up 'protection' and blackmail rackets. In these and many other ways, professional beggary has become a blot on human societies.

It soon became apparent to the political and ecclesiastical opportunists that charity 'should be' organized; and they proceeded to take upon themselves the responsibility of organizing it and handling the money and goods. Such charity organizations still flourish and many of them are profitable enterprises, indeed. The take that is passed on to the needy charity cases may vary from 10 to 50 per cent of the gross, seldom over 50 per cent and sometimes well under 10. The accounting is generally very sloppy, and where the bulk of the proceeds goes is seldom revealed. A large part of the discrepancy is usually eaten up by 'publicity and administration costs.' Sticky fingers and payoff account for the rest.

'It is more blessed to give than to receive' is an example of pious come-on propaganda used to promote charity contributions. It implies that credits to one's account in the hereafter may be built up through giving to the poor or, at least, that emotional satisfactions will be achieved in the here and now. However, the charity shakedowns have been so thoroughly organized and the social pressures so well aligned that, in America at least, one feels a compulsion to contribute to the major charity drives regardless of how little faith one may have in their benevolence or how much resentment one may have toward being 'taken.' In fact, a failure to 'shell out' may be a blot on one's record in case he is ever called up for investigation by a congressional or community inquisition. How many respectable American citizens with families, a job or a business, and status in the community would dare refuse a yearly contribution to the Red Cross, the Community Chest, and certain other charity shakedowns?

In early times, among 'heathen' communities, the practice of giving to the poor was an instituted custom which served a social need. These early tribesmen lived for the most part on a narrow margin between survival and extinction, with the food supply being a major factor. Consequently, particularly in the barbaric communities where private enterprise prevailed, some would be less fortunate than others,

with the result that the least provident would be faced with starvation during the winter or the dry period of the year. It was, therefore, expedient for those who had acquired a surplus to give some of it to those who were most in need, to tide them over until spring or the wet season. This gift-giving tended to be highly ceremonialized; and, in the northern temperate zone, it usually accompanied the celebration of the Winter Solstice — the time when the sun ceased its southern migration and would start moving northward again. This occasion is still celebrated as Christmas, having been taken over and incorporated in their ritual by the early Christian evangelists, who took the liberty of proclaiming it as the birthday of their Christ, which was legitimate evangelical license since there was no record as to the exact date of His birth. This early significance of the Winter Solstice celebration no longer applies in modern nations, but the gift-giving aspect persists nevertheless.

Gift-giving Commercialized

In modern society, gift-giving is aggressively promoted by business enterprise. By this means, business is able to dispose of huge volumes of high-profit merchandise, most of which one would not buy for himself but might be induced to buy for purposes of inflicting it upon his friends and relatives. The most shoddy and disgraceful merchandise of all is that which business provides and adults buy for the children. The small children, in turn, show their contempt for it by smashing it up almost as soon as they receive it. Christmas is the one time when gift-giving is promoted for all it is worth. In many cases, the Christmas business determines whether or not the merchant makes a profit for the year. But there are other occasions which receive their due share of promotion — New Year's Day, Valentine's Day, Easter, Mother's Day, Father's Day, Graduation Day, Birthdays, and others of a more local or parochial significance. None of these occasions serve the purpose of providing welfare for the poor out of the bounty of the wealthy; although a token gesture in this direction is made at Thanksgiving time in the United States when a few baskets of food are assembled for a selected list of the least fortunate families.

Technology is Eliminating Poverty

'Give to the poor' is a mandate of the Christian religion. Yet, technology is making it increasingly more difficult for one to practice this aspect of his religion; for, technology tends to eliminate abject poverty as a prevalent feature of the community. The abundance which technology makes available compels the community, directly or indirectly, to provide some form of welfare for those residents whose income falls short of supplying them with the necessities of life. Thus, most communities in the United States and Canada make relief payments and other concessions to their indigent citizens. The destitute itinerant, however, is usually less of a concern to the local agencies and is forced to adopt more anarchic means of providing a living for himself. The Bowery bums of New York City represent a wholesale example of unfortunates who, in the greatest and richest city in the world, are compelled to sleep on the streets and beg for subsistence. Another large clan of beggars, whose need is less obvious, are the Catholic nuns who sit around wherever large numbers of people pass, with coin receptacles conveniently available to those who are inclined to succumb to this form of beggary.

'The poor ye shall always have with you' was the best prophesy for the future that the wise men of pre-technological times could make. This condition was inevitable in an age of scarcity and hand-tools, particularly under the barbarianism of the Price System. Earlier, in pre-barbarian times, among the savage tribes, where the goods of the community, particularly food, were shared on a communal basis, poverty and want applied about equally to all members of the tribe; and it applied for much of the time, being due to the very primitive techniques of gaining a livelihood rather than to the greed and acquisitiveness of a few successful members of the society, as under barbarism. In a modern technological society, poverty and want are anachronisms which persist mainly because a Price System pattern of social regulation continues to prevail.

Undeserving Desire Status of Deserving

The undeserving poor always served as a gratifying contrast for the deserving fortunate. As silly as it may appear, it is the desire for this contrast that keeps the successful citizens as a group rabidly conservative or reactionary with respect to the status quo. For one to advocate that all men be raised to a position of economic equality is viewed as the rankest form of heresy among the 'upper class' circles; and the same thing applies to a lessening degree as one goes down the economic scale. The social code that permits a few to live elegantly and keeps the great majority in, or near, poverty has become the most sacred among all our 'sacred cows.'

The bourgeoisie glibly mouth the phrases of social democracy, but they have no intention or desire of letting them be literally translated into actuality. To them, 'democracy' means the right of the deserving to dominate and use the undeserving; 'justice' means having the laws and the judiciary 'fixed' in favor of the wealthy; 'free elections' refer to those which are rigged by the few at the top; 'equality' means that individual privileges and opportunities shall be apportioned according to the dollar value of one's holdings. To the bourgeoisie, there is no violation of the principles of democracy, freedom, and equality when some people must flop for the night at the Bowery House while others may luxuriate in a suite at the Ritz.

Under the Price System, the poor and undeserving do not resent in any positive way the differentials that prevail in their society. Their chief regret

is that their own particular status in that society is so low — a condition which could be readily corrected if their ticket in the Irish Sweepstakes should be the lucky one or if they could just win the radio quiz prize. Each social stratum prefers to retain the social differential between itself and those below; while, at the same time, the individuals in that stratum hope and seek to advance at least one level above where they are.

No effective effort has ever been made by the moralists to alleviate the poverty, misery, toil, and superstitions of the poor. Christian people, for example, fostered slavery and resisted abolition. They have eulogized poverty and drudgery. And they have condemned those who favored improvement in the physical circumstance of the poor in this earthly life. The amelioration of poverty and its eventual abolition have had to await the development of trends of a far different sort than those preached by the moralists. Science and technology have proven to be the supreme abolishionists of slavery, poverty, toil, superstition, and human degradation. Yet, the professional moralists have condemned science at every step of the way and, even now, they are wringing their hands in alarm over the future possibilities of science.

Science Doesn't Differentiate

Science has studied man as an individual, as a species, and as a society; and science has concluded that men are very unequal in nearly every respect. Yet science has never developed a theory of differential justice, morality, or human rights. Without considering whether man is deserving or undeserving, science and its twin, technology, have consistently done things to improve the lot of man in his environment and at the same time have improved his environment.

Science has analyzed man in relation to the rest of nature and has concluded that he is a functional mechanism. Accordingly, science has tended to treat man as man would treat a piece of machinery. The emphasis has been upon the functional requirements of man rather than upon some vague theory of what is good for him or good for his 'spirit.' As a result, science has steadily stripped away the tangle of philosophical beliefs and superstitions which have held man in bondage, degradation, and fear for all the centuries of his existence.

Among other things, science has determined that man must have food, shelter, comfort, activity, and rest, in order to operate efficiently as a functional mechanism. These needs have no relationship to the dollar holdings of the individual, but they may have a relationship to his size and rate of basic metabolism. That people should be treated differently with respect to their physical needs because of differences of intelligence, differences of color or physiognomy, or because of differences in the households and geography of their birth is an absurdity to the scientist.

The only differences that science would recognize with respect to human welfare would be those associated with differences of environment, differences in the structure and and physiology of the individuals, in their interests in life, and in their functions in the society. A person living in the far north, for example, would require some differences in supplies and equipment compared to the man in the tropics. Likewise, the needs and wants of individuals vary with their size, structure, sex, physiology, and age. The personal interests of the individual also demand specific differences in material and behavior patterns to go with the pursuit of those interests. And differences in occupations affect the physical requirements and certain other facets in the way of life of different individuals. Beyond these differences, there is little basis for setting up social differentials in the population.

One of the biggest lies perpetuated by the upholders of the Price System is that a personal incentive is essential to one's doing his best work. A personal incentive may stimulate one to connive at ways and means of wangling more of that incentive from the system; but that it stimulates him to do better work is highly doubtful. More likely, it will motivate him to sacrifice quality in favor of quantity when quantity has more commercial value. How many people do you know, among those who have made a conspicuous success at gaining incentives, who would have any reason to be proud of the quality of their accomplishments which grew out of their quest for those incentives?

Does an amateur athlete or other sportsman perform any more poorly because he is not paid for his effort? Does the soldier display less valor on the field of battle because he is fighting for his country and not for dollars? Does a hobbyist devote himself less enthusiastically to his hobby because it does not pay off in incentives? Does an inventive genius invent less well when experimenting at his own expense than when being paid by the 'piece'? It is almost certain, rather, that corruption and shoddiness enter in when the incentives increase.

People Exploited

It would seem that in a barbarian culture, the only time the leaders call upon the people to do something for the group out of loyalty to the group is when there is no way of making private gain directly from the venture. But, even then, the people are often deceived and fraudulently exploited. For example, in wartime the people are called upon to make severe sacrifices 'for country and liberty' at the same time that the war is being promoted for the enrichment of a few. It is well-demonstrated by examples that people will work and sacrifice heroically for the welfare of the group without hope of personal gain. It is equally well-demonstrated that individuals, in high places and low, will double-cross the group for private incentives. Therefore, any argument advanced in support of incentives as social

assets is unfounded and probably mischievous in purpose.

It is because of incentives that barbarian societies are characterized by riches and poverty existing side by side, with the side of poverty heavily overweighted in numbers of individuals.

Many attempts have been made, at different times and in different places, to establish collective communal economies, varying from small communities to great nations. The rallying slogan has been 'Liberty, Equality, Fraternity' or some reasonable facsimile thereof. The social principle is 'each for all and all for each.' But all such experiments have been either exterminated from without or corrupted from within, more often a combination of the two. The upholders of barbarism are very vigilant against the arising of any form of social system that is basically more efficient and equalitarian than the wasteful, corrupt system they espouse. Note, for example, the gigantic efforts that have been made to quash the 'Russian experiment' since 1917. We note the same forces are at work, sniping at and undermining public works and cooperatives on this Continent. The communal philosophy and mode of living of the early Christians have been completely eradicated.

The Soviet Union is not an example on a large scale of communal living by a population as its leaders proclaim; it has a long way to go before it can legitimately claim to be living up to the principles of a truly collective economy. Since its inception, bolshevism has made a number of major compromises with the incentive principle, on the theory that 'all people are equal, but some are more equal than others.' These compromises appear to be doing more than anything else to defeat the spirit of collectivism in the U.S.S.R.

Technology vs. Poverty

Ironically, it is the incentive principle of the Price System which, in technologically advanced nations, is contributing to the elimination of poverty and the establishment of a welfare state; not by intention, but by circuitous indirection. As we have noted, in pre-technological times, the great bulk of the people were held in poverty and toil in order to produce wealth for a few. That was the usual social pattern throughout the world until almost yesterday. The reason was that human toil could never produce enough for all; so, if a few were to live in luxury, it meant that the many must live at the lowest possible level of subsistence. Now, thanks to technological production techniques, huge quantities of nearly everything can be produced, with the result that there is enough to go around to all. The problem is not one of production, but one of marketing that which is produced. The incentive-minded people at the top must have customers in order to make enough sales to provide them with their incentive for producing abundance.

Poor people are also poor customers. So the trend in social manipulation has been toward a collective subsidization of the consumers, that they may become better customers for business. General relief payments for the indigent, social security for the retired, unemployment compensation, old age pensions, price support programs, these are all recent innovations, introduced to stimulate purchasing power among the customers of business enterprise. Wages and salary increases for employees have been accepted for the same reason; also higher pay for the men in the Armed Forces and government service. Of course, there are a few diehards of the Old Order, both in industry and government, who still believe that the undeserving should remain in circumstances of poverty and toil, and they resist bitterly any increase in the cost of subsidizing customers, but they are a shrinking minority. The general cry is for more and more purchasing power in the hands of the consumers; and when this is not forthcoming in hard cash, sales are made on easy credit plans.

World Wide Technological Revolution

As a consequence, many of the erstwhile undeserving poor are beginning to feel that they are moving up among the deserving, so they migrate to the suburbs, buy 200 horsepower jalopies, and vote Republican or Conservative. Even the poor 'Oakies,' who were lured to California as a plentiful supply of cheap labor during the depression, have graduated into 'native Californians,' with all the social superciliousness that that term implies.

American technology has been so productive since The War that the purchasing power of the poor on this Continent could not be subsidized fast enough within the framework of the Price System for them to buy up the production. Therefore, under pressure from business enterprise, the government of the United States has been subsidizing purchasing power in other parts of the 'Free World' by one means and another as well as at home. The subsidy may be in the form of cut-rate prices on American surpluses, direct gifts to foreign peoples, dumping of supplies on foreign governments, military aid programs, reconstruction and rehabilitation programs abroad, and liberal loans to foreigners for purposes of buying American-made goods. The bourgeoisie of other lands, motivated by fear of losing their local incentive advantages, have often protested that America was undermining their country's economy. Sometimes the subsidy of the consumers in such cases has been abandoned; other times it has been enlarged to include the bourgeoisie.

The technological revolution of the world is in full swing. Giant power plants are being installed in numerous places around the globe and these are followed by giant industrial establishments. The demand for customers is booming toward a crescendo throughout the enterprise areas of the earth. And still, surpluses of many kinds pile up in many places. There is an urgency for raising the standards of living of the poor that they may become better customers; and, with strange coincidence, there is slowly developing among the social leaders of the world a

general moral protest against poverty. The 'discovery' that it is beneficial and right for each person to consume a quart of milk per day, for example, coincides with surplus production in the dairying industry. The poor people of the world are all too eager to cooperate fully with this new trend; in fact, they are so eager that they tend to push it along faster than the leaders are ready to accept it.

Technocracy has consistently maintained from its beginning that the only way to distribute abundance is to give it away. Only a few people understood the meaning of that statement at first; but, it is becoming increasingly more obvious now. Although the rules of the Price System forbid the production and distribution of abundance, the industrial technology of the Continent continues relentlessly to produce abundance, while the politicians and businessmen frantically seek ways and means of circumventing the rules of scarcity and retaining the Price System at the same time.

The struggle against abundance is a losing fight; for, there is not enough cohesion within the ranks of the Price System leaders to enable them to do that which must be done if scarcity values are to be maintained. The administrations of the United States have been trying desperately to dominate the economy of the world in the interest of scarcity values, and they have done so with considerable success, but huge chunks of territory refuse to cooperate. These insist on forging ahead in spite of our 'advice' to the contrary. As a consequence, the United States is beginning to lose its industrial supremacy. Other countries and other nationals are displaying an alarming knowledge and competence in the technological field. For the first time, America is having to follow rather than lead in technological design and techniques. Abundance within the capacity of the world's resources cannot be suppressed.

The poor of North America are disappearing; that is, the very poor in the historical sense. There are many who are underprivileged in a relative sense; but, in absolute terms, they are highly prosperous when compared to the standards of a hundred or even fifty years ago. They are now referred to as 'low income groups.'

Repudiation of Price System

The resources and technology of North America have been so used as to demonstrate to the world what can be done; and it is being revealed to Americans what can really be done for them on this Continent. But before all that they want can be achieved, North Americans will have to repudiate the Price System and turn to Technocracy and its program for technological abundance.

Then for the first time the moralists will be able to say with conviction, 'blessed are the poor,' for they (the poor) will have already entered the 'kingdom of heaven' — on earth.

—Wilton Ivie, CHQ

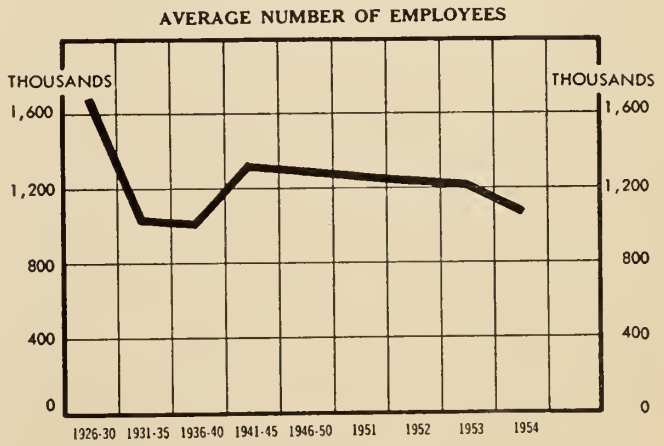
Progress in Railroads

Improvement in the efficiency of railroad operation has continued steadily since the end of World War II. This marked improvement in transportation efficiency is the direct result of post-war expenditure of about $9.9 billion for road and yard diesel locomotives; construction of better tracks, yards and terminals; addition of thousands of new freight cars with larger carrying capacity; and the installation of centralized traffic control and other improved signal systems.

In order to bridge the wide gap between the relative increases in outgo and income the railroads have made an all-out effort to increase efficiency in all phases of operation. Mechanical and engineering research into every part of the railroad plant has resulted in marked progress in efficiency.

Substantial progress has been made in service performed per average freight train hour, generally accepted as a measure of transportation efficiency. In 1954 each freight train performed an hourly average service equivalent to transporting 23,876 tons of freight a distance of one-mile, as compared with the previous high of 23,443 established in 1953. In the 1921-25 period the average ton-miles per train-hour figure was only 7,959; and in the 1936-40 period it was 12,949.

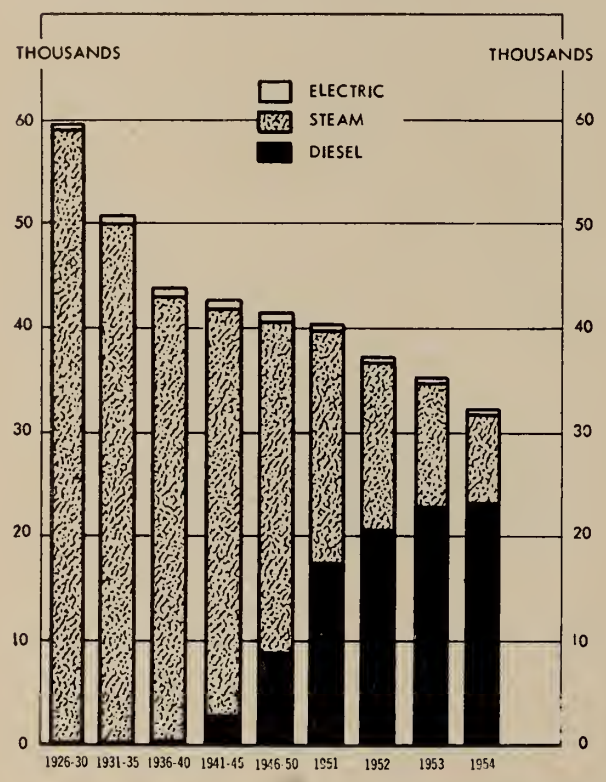
For the most part, while the average ton-miles per train-hour has steadily increased since the 1921-25 period, the average number of employees has declined as has the total man-hours of labor. In the



1921-25 period the average number of employees in the service of the Class I railroads was 1,727,939 as compared with only 1,064,705 in 1954. In other words, it is taking less employees and fewer man-hours to haul more freight a greater distance.

Significant improvement has also been made in average train load, another important yardstick of operating efficiency. In 1954, the average freight train transported 1,287 tons, or only 14 tons less than the all-time record of 1,301 tons carried in 1953. The 1954 average, however, was 83.3 percent above that for the 1921-25 period and 58.5 percent above the 1936-40 average.

NUMBER AND TYPE OF LOCOMOTIVES



—photos courtesy Railroad Facts

The average freight train in 1954 consisted of 65 cars as compared with 63.2 cars in 1953; with 39.6 in the 1921-25 period; and with 48.3 cars in the pre-war period, 1936-40.

In 1954, each serviceable freight car performed an average daily service equivalent to carrying 867 tons of freight a distance of one mile. Average ton-miles daily per serviceable freight car was only 509 in the 1921-25 period and 604 in the pre-war period of 1936-40.

One of the most important advances in railways has been the increased use of the diesel type of locomotive and the rapid decline in the use of steam locomotives. Locomotives in the service of Class I railways at the end of 1954 totaled 32,761 and included 8,530 steam, 656 electric, 23,550 diesel-electric units and 25 other type locomotives.

During 1954 diesel electric locomotives handled 84.1 percent of gross freight ton-miles, 86 percent of passenger car-miles and performed 89.7 percent of yard hours of switching. From the beginning of World War II to the end of 1954, the number of diesels in service has increased by 22,283 units and the number of steam locomotives has declined from 39,624 to 8,530, a decrease of 31,094 locomotives.

The rapid transition from steam to diesel power was due to many factors, the most important being greater fuel efficiency or low energy cost of operation and higher availability. The diesel locomotive can be operated more hours of the day and more days of the year without the time out needed by the steam locomotive for attention to its fires, boiler, coal and water replenishment, and frequent maintenance. During this transition from the 1926-30 period through 1954 the number of all types of locomotives has been cut almost in half.

The railroads have probably made more progress in transportation efficiency since the end of World War II than in all its preceding history. And no doubt the trend of greater efficiency, which will lower operating costs of the railways, will continue at a rapid rate, with emphasis being placed on the displacement of employees by automatic devices. There is no reason why our railways cannot be operated on the same principle as an automatic factory with all products transported from the point of origination to the point of destination.

Los Angeles Examiner, Nov. 11 — Los Angeles' freeway system is overflowing with a daily load of 1,061,000 vehicles, the State Div. of Highways reported yesterday.

During the 12 months ending in July the daily load increased 153,000 and has undoubtedly climbed still higher since then, Assistant Engineer P. O. Harding said.

. . . The critical point is the downtown four-level freeway interchange, which has an increase of 50,000 from the 200,000 a day counted in 1954, he said.

Sacramento, Oct. 4 (AP) — California's farm income for 1954 today was placed at $2,504,596,000 —down almost $130,000,000 from the previous year.

The figures were released by George A. Scott, statistician for the Federal-State Crop and Livestock Reporting Service.

. . . Scott termed the gross receipts an "important measure of the economy," but said they did not accurately reflect the net income of farmers. Production costs have risen in the past several years, he said, so the gross figures would not be proportional to profits. . . .

New Techniques and . . .

AUTOMATION

Machine Replaces Hands

Automatic wiring of complex electronic equipment is in the making.

A machine that will replace hands in making the many electrical joints in communication and other electronic devices has been developed in experimental form by the Bell Telephone Laboratories, Inc.

Known by the code letters "M4," the machine follows instructions from a punched tape which guide it through the intricate wiring operations.

Bell Labs says: "It can be visualized that when suitable apparatus and equipment designs are ready for manufacture several machines developed along the lines of M-4 can be used at once, all receiving instructions from the same tape or 'common brain.'"

Electronic Computers Save $$$

Planes, Oct. 26 — Electronic computers used in engineering America's jet aircraft save the taxpayer many thousands of dollars every year.

As an example, mathematical problems which would cost $30,000 for every million operations by a clerk using a desk calculator are now done on these complex computers at a cost of only three dollars per million operations. And, further, it is estimated that in the future through wider uses of the electronic wonders, the cost for the same number of operations may be reduced to as little as 30 cents.

Not only behind the closed doors of aircraft engineers and scientists are these revolutionary new machines paying for their keep, but they have also added enormously to the operational ruggedness and reliability of modern supersonic military aircraft and commercial transports.

The development of electronic units capable of withstanding extreme changes in temperature and severe pressures and shocks encountered at jet speeds and altitudes has also been essential in manufacturing the delicate electronic components. Ultrapremium tubes are capable of withstanding temperatures as high as 550 degrees Fahrenheit.

Borrowing from the control principles used for aircraft and missiles, these electronic units are now being used in many industrial processes.

Bottleneck Removed

Los Angeles Herald and Express (Detroit, Oct. 3) — A revolutionary new machine which uses electronics to turn a blueprint into a complex finished product was disclosed here today by the Bendix Aviation Corp.

Called the "Cam Machine," the new device will accomplish in from two to four hours a technical operation which previously required approximately 400 man-hours — or from 5 to 10 weeks.

Dr. A. C. Hall, director of the Bendix Aviation Research Laboratories here, said the machine removes a tremendous bottleneck in jet engine production.

Although developed to meet a special problem in the production of cams for jet aircraft fuel systems, the new development — described as a long step in the direction of automation — is expected to have wide application in machine tool processes.

File Searcher

Fort Wayne, Ind. — An electronic machine called 'Minicard System' will graphically record, compactly store and rapidly find information ranging from blueprints and fingerprints to statistics and weather maps, and is expected to go on the market next year.

This complex machine was designed by Eastman Kodak and Magnavox Co. The system reproduces documents on the cards at a reduction of 60 to 1, about three times the reduction used in current microfilm systems. Minicard's developers say the system combines the most desirable characteristics of the microfilm, punched cards and an electronic memory.

Code signals are fed Minicard telling what information is wanted and it searches the files at the rate of 1,800 cards a minute or 21,600 pages of documents.

It is expected that the first complete system will be delivered to the Air Force early next year. Development was started in 1949 and has been financed in part by the Air Force.

Farewell to Guaranteed Wages

Detroit — A new highly automatic V-8 engine plant, here, featuring new methods of engine testing and assembly, was unveiled by the Plymouth division of Chrysler Corporation.

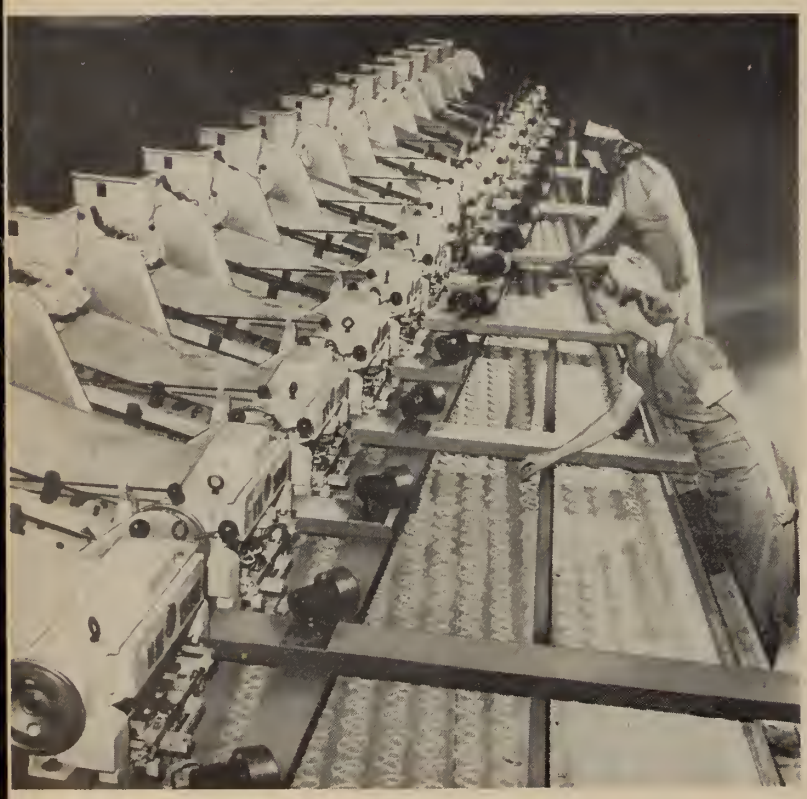
At the present time the output is about 600 engines a day. When it reaches capacity production about November 1 ('55), it will be able to produce about 3000 engines a day.

A feature of the new plant is an automatic testing area which Plymouth says is the only one of its kind. It has 72 testing stands. One man can operate six testing stands compared with a requirement of two men for each stand previously. In this one operation of the plant the number of workers has been reduced from 144 to 12 with the productivity increasing many times over the old method.

The plant also features an automatic assembly line 560 feet long which assembles engines at the rate of 2½ a minute. The line has a new-type conveyor that places the engines exactly under automatic machines that lower into place and tighten engine nuts. In other auto industrial plants, these nuts are tightened by pneumatic wrenches operated by hand.

Automatic machining operations in the plant are controlled from large electronic panels on overhead walkways.

The division claims a new record for the auto industry by turning out the first engines just 17 months after design on them was begun.



Eliminates Time-Consuming Detail

Menlo Park, Calif. — The Bank of America has led the banking world into a new era of automation when it recently unveiled here the world's first large-scale high-speed electronic bank bookkeeping machine.

Named ERMA for electronic recording machine-accounting, the revolutionary machine was developed and constructed for the Bank of America at the laboratory of Stanford Research Institute.

ERMA represents the greatest advance in the history of banking. It does all the daily bookkeeping for 50,000 individual checking accounts. It sorts checks and deposit slips, enters the amounts instantaneously on each customer's account while rejecting any check on which payment has been stopped, or which is drawn against uncollected funds, or would over-draw the account. Arithmetically, ERMA cannot make a mistake. It prepares and prints customers' monthly statements at the rate of 600 lines a minute.

ERMA eliminates at least 80 percent of the time-consuming detail in servicing checking accounts. And its techniques and abilities can be applied to the solution of the "paper problem" in many types of business. Even the unnecessary activities under the Price System cannot avoid the use of electronics to reduce man-hours of labor and overhead cost. Certainly our technology could be put to much better use than the perpetuating of obsolescence.

By Hand

By Machine

For many years pretzel baking resisted the advances of science. Until three years ago the Sturgis bakery (the first pretzel bakery in the U. S.) was still operating in almost the same manner as it did when it was founded in 1861. Expert hand twisters (top) are still at work in some bakeries. They can turn out 32 pretzels a minute for limited periods but won't average more than twenty. Machines such as the bank shown at the left form 50 or more a minute and never take a coffee break. Each accounts for one row of pretzels on the belt.

—Photo courtesy Compressed Air

Toward the Technological Solution

The latest wrinkle out of Detroit is a radar-equipped automobile that stops automatically if something gets in its way. Developed by Carl Rashid, a Detroit safety engineer, it may be the solution to some of the traffic problems, ultimately saving lives and property.

The car has a radar screen directly below the grillwork, several inches high and extending the width of the auto. It projects an impulse that is guaranteed to halt the car should anyone or anything appear in its path.

The radar does not work unless the car exceeds 10 m.p.h. and therefore would not hinder parking or entering a garage, and so forth.

Automation Defined

The International Engineer, Aug. — The development of automation in metal working is described in an illustrated article presented June 20 at the Diamond Jubilee semi-annual meeting of The American Society of Mechanical Engineers in Boston, Mass., by Anderson Ashburn.

. . . The author concludes that the practice of automation is about 175 years old but that the word "automation" was put into use only about eight years ago.

"Automation" will be defined in the next edition of Merriam-Webster's International Dictionary as follows: "Automation, n. 1, The act or technique of making a manufacturing process fully automatic. By this technique parts are moved into and out of machines without being handled by human operators. 2, The state of being automatic. 3, Automatic operation, as of machine." Ashburn's paper indicates that this definition planned for the dictionary may not be broad enough.

Solar Battery

Americus, Ga. (UP) — An engineer flipped a switch here today and turned the energy of the sun into the operation of a telephone system.

This was man's newest victory in his efforts to tap the inexhaustible source of all the energy at his disposal. The Bell Telephone gadget, resembling from the front a big coin slot card, was a solar battery.

The battery, which is the first successful device for converting the sun's energy efficiently into electricity, contains 432 silicon cells. Each of the cells converts as much as 11 percent of the energy it receives from the sun directly into electricity.

It operates on a very small amount of light — a candle or a flashlight will set the silicon cells to making power from the flame.

What's Next?

Dayton, Ohio (AP) — Automation has hit the grade school student, at least in Dayton. Time was when they could break loose to go clean the erasers. Now machines do the job.

School officials here say most buildings now have standard electric eraser cleaners. Now the chalk dust goes into the vacuum bag, instead of Junior's lungs.

Surpasses Human Mechanism

Flint, Mich. — An automatic gear line which can produce 3,000,000 precision gears annually, and equipped with an electronic ear that can detect imperfections inaudible to the human ear, has been developed at Buick.

Special gauges, newly developed for this process line, check each gear after each machining operation. If a gear is off size the smallest fraction of one-thousandth of an inch, it is rejected and the gauge adjusts the machine so the next one will be the proper size. Each gear must pass 15 such inspections before it is finally approved.

Buick uses four of the pinion gears made on this line in each Dynaflow transmission. With production running about 750,000 cars annually, this makes necessary the production of 3 million gears a year.

White Collar Sanctuary Invaded

The electronic industry took advantage of the 81st annual convention of the American Bankers Association to show new devices that are bringing push-button banking closer to reality.

National Cash Register Co. displayed its new "Postronic" electronic bookkeeping machine. Its makers claim that by picking up electronically, rather than manually, data previously recorded, the machine will enable banks to establish a degree of accuracy in checking-account bookkeeping that could only be done before "through time consuming and costly duplication of effort."

Underwood Corp. showed its new "Rapid-Sort" machine designed to sort checks, deposit slips, money orders and the like at a savings in time of "83 percent over hand sorting."

Mosler Safe Co. displayed "Monitrol Teller-Vue" which contains a TV receiver, a currency tray, a two-way loud speaker and an alarm system. This device uses closed-circuit TV to give the teller direct contact with the main office, if he wants to check a signature or verify a customer's balance. The company contends that a bank with branches in high rent districts could save money, time and space by centralizing its records blocks away in a low-rent area — using the machines to check any needed information. . . .

What Technology Actually Does

What technological improvements and better machinery can do is dramatically illustrated at the Altoona (Pa.) plant of Schwarzenbach Huber Co., a synthetic fabric producer.

Since 1950 productivity has increased more than 300 percent with the help of new machinery and improved work methods, says Mr. Schwarzenbach. In 1950, the weaving rate was 20,000 picks per man per hour (this refers to the number of threads put across the cloth under production each hour). By 1955, the rate had been increased to 70,000 picks.

How was this done? Over the five year period every loom in the plant was replaced with new machines that made it possible to increase the work load from 24 to 65 looms per weaver. And employment was reduced from 300 to 220 workers with an increase of productivity, as stated, of more than 300 percent.

Produce Icing Now Mechanized

Laramie, Wyo., Oct. 2 (AP) — That fresh head of lettuce you have in the refrigerator wouldn't be so fresh if it wasn't for the mechanized icing of refrigerator cars here. Entire trains of produce — 60 to 90 cars — now can be re-iced in less than a half hour.

The average time for icing a car is about 45 seconds.

Homer Whitlook, manager of the operation, says it is the only completely mechanical icing setup in the nation. From the time the ice is manufactured—486 tons per day — until it is dropped into the refrigerator cars, *it is not touched by human hands.* A conveyor moves 300-pound blocks of ice to a platform level with the tops of the cars. Another machine chops them into 50-pound hunks and flips them into the bunkers at each end of the car. *One man controls the electric-powered machine.*

Effects of Automation Debated

Labor, Oct. 22,—What will automation, the new industrial revolution, do to American jobs? That question was hotly debated by leaders in industry and labor and by automation experts at hearings that opened this week in Washington. The hearings are being held by a subcommittee of the Joint Congressional Economic Committee, under Congressman Wright Patman of Texas.

Automation is defined as the replacement of men by electronic controls in running machines or accomplishing other work. In recent years it has swept into one industry after another, ranging from making baby's bottles to the clerical work of banks, stores and railroads.

. . . Robert Burgess, director of the U. S. Census Bureau; John Diebold, an automation consultant; and industry spokesmen from various auto, machine tool and radio-television producers all claimed that workers displaced by automation will be and are absorbed into other jobs. Only Burgess conceded that automation might "lead to some serious short-run dislocations in particular industries and particular parts of our country."

CIO chief Walter Reuther, however, warned that "many problems will inevitably arise in making the adjustment to the new technology," leading possibly to "untold harm to millions of innocent people."

"We welcome the great potential benefits which automation can and should bring," Reuther declared. "But we oppose those who would introduce automation blindly and irresponsibly, with no concern for any result except the achievement of the largest possible quick profit for themselves." The CIO chief especially assailed the "almost inconceivable blindness" shown by the National Association of Manufacturers in refusing to admit that automation poses any social problems.

Employers, Reuther added, should be required to bear part of "the cost of helping individual workers to adjust to the changes produced by automation." Many other measures will also be needed he said, including "reduction of the workweek to 35 or 30 hours in the next decade," extended vacations, early retirement for older workers, increased schooling for the young, a higher minimum wage, and higher pay and lower taxes for the average family, to ensure the widespread purchasing power needed for buying industry's increased output.

A similar view came from an economic expert, Professor Walter S. Buckingham, Jr., of Georgia Institute of Technology. "Automation favors the long-run improvement of well-being," Buckingham pointed out, but, "it is understandable why workers and consumers should be concerned. Our leaders of industry, who are men of vision, are also men of wealth and position who can afford to take the long run view. But the rest of us live in the short run, unfortunately, and that is where the potential dangers lie."

One recent study, Buckingham reported, "revealed that in 12 cases of automation ranging from chocolate refining to railroad traffic-control the reduction in employee requirements ranged from 13 percent to 92 percent, with an average reduction in employment of 63.4 percent." In U. S. industry generally, Buckingham further noted, production in mining and manufacturing was about the same at the end of 1954 as at the beginning, but total employment in these industries was down by almost one million.

Howard Coughlin, head of the AFL Office Employees union, then told how his union is meeting the job-threat of electronic machines in office work by insisting on company retraining programs for displaced workers and inserting "bumping" standards in layoff clauses of the union's contracts.

Otto Pragan, research director of the AFL Chemical Workers, also noted that company retraining programs for displaced workers are part of several of his union's contracts. In the chemical industry, Pragan pointed out, output has risen over 50 percent since 1947, while the number of production workers has increased only 1.3 percent.

Why We Need . . .

Continental Hydrology

Editor's Note:

Considering the importance of water to our high-energy civilization, an expenditure of $4.3 million to solve the critical water problem will hardly be a 'drop in the bucket' when compared with the billions of dollars spent by the Federal government on so-called defense, diversionary research, subsidized scarcity, 'pork barrel' projects, etc. It is the height of ignorance and futility to expect that any political proposals will meet this vital resource need. The complete integration and coordination of the social mechanism of the North American Continent, which includes our water resources, requires a scientific method of social operation, not picayunish political ripples of expediency.

The problem of an adequate supply of water is one that increasingly impinges on the consciousness of the public, more especially when lack of rainfall forces cities to urge householders to limit their use of water to a minimum. In recent years the problem has become national in view of the heavy increase in its use for irrigation and industrial purposes.

Households, too, are steadily using more, estimates placing the family's daily use at about 145 gallons. The rise in water use is an accompaniment of a higher standard of living. Total water use quadrupled between 1900 and 1950. It is estimated that by 1975 consumption will have doubled the 1950 volume.

Last year the withdrawal of water for all uses probably exceeded 200 billion gallons a day, according to the United States Geological Survey, compared with 170 billion four years earlier. Of the former amount, industry is held to have used 100 billion a day for cooling, washing, grading, flushing, etc. Making an auto, for instance, requires 100,000 gallons of water, a ton of steel on the average about 65,000, and a ton of wood pulp 40,000. The rise of new chemical processes in the making of synthetic products has meant a far vaster consumption of water in manufacturing than formerly.

Irrigation is a close second to manufacturing in water use, and has shown the largest consumption gains in the last century. A total of 25,800,000 acres, mostly in the West, were being irrigated in 1950, and this figure has risen substantially as the South and East sought larger crop yields. More than 3,000,000 acres have been put under a sprinkler system on which $55 million was spent in 1954, a 22 percent increase over the year before.

There are about 16,750 public water systems in the United States, and these consume in the neighborhood of 14 billion gallons daily. Records for 1953 show that fully 1,100 municipalities had to curtail the use of water by many or all of the 24,000,000 customers. Some of these shortages were laid to population increase or seasonal use, some to inadequate treatment and distribution facilities, and about one-third to drought or failure of supply.

Pollution can cause a water shortage, too, as where industry pours its waste water into streams and lakes. A federal report in 1952 showed that more than half of 3,000 industrial plants surveyed did not recirculate their water. More and more plants, however, are now cognizant of the need for conserving the supply of this natural resource, and are recirculating water many times. One Texas utility, for example, now uses one gallon of water per kilowatt-hour of out-put, compared with rising 100 gallons by power plants that do not reuse their water.

Future Supply Uncertain

Federal money to match annual state expenditures for water sources investigations had risen from about $1,000,000 in 1943 to more than $3,000,000 in 1951 and to $4,300,000 in the fiscal year ended June 30, 1955. These higher expenditures reveal the growing concern over our future water supply.

Authorities say that water resources replenished by precipitation will exceed total demand for at least 100 years, but practical engineers say that even distribution makes such a statement meaningless. The western states have 60 percent of the nation's area, but only 30 percent of its water supply. In west Texas, New Mexico, and Arizona, for instance, water shortages are a common occurrence, while in California, most of the water supply is in the north and irrigation must supply the southern area.

Numerous methods are being used to increase the usable supply. Emphasis is placed on properly cultivated fields which check run-offs and keep soils from washing down into reservoirs; on reducing the number of water-absorbing trees; on periodic thinning and harvesting of young trees; on reducing

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—by George Ericson

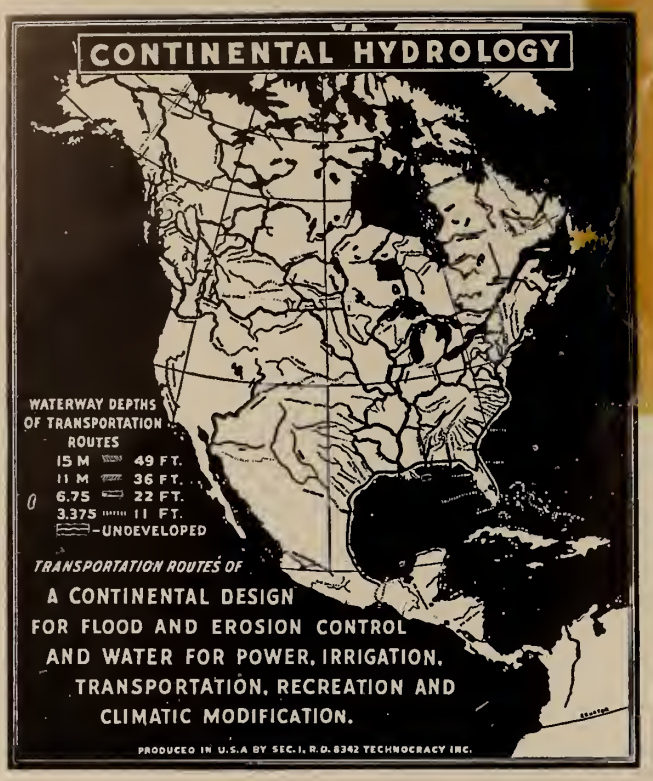

CONTINENTAL HYDROLOGY
WATERWAY DEPTHS OF TRANSPORTATION ROUTES
15 M 49 FT.
11 M 36 FT.
6.75 22 FT.
3.375 11 FT.
-UNDEVELOPED
TRANSPORTATION ROUTES OF
A CONTINENTAL DESIGN FOR FLOOD AND EROSION CONTROL AND WATER FOR POWER, IRRIGATION, TRANSPORTATION, RECREATION AND CLIMATIC MODIFICATION.
PRODUCED IN U.S.A. BY SEC. I, R.D. 8342 TECHNOCRACY INC.

Photo courtesy Compressed Air

The water shortage is conclusive evidence of the necessity of installing Technocracy's over-all program, which includes a Continental Hydrology.

evaporation by selecting reservoir sites where the climate is least favorable for evaporation; on preventing salt water contamination with fresh water supplies in land near the ocean; and on abating pollution by treating sewage.

Then, too, the laboratory may find a cheap method of converting salt water to fresh, thus providing an inexhaustible supply. The experts have been busy for some time in this search. The Department of the Interior's goal, for municipal use, of 38 cents per 1,000 gallons for obtaining fresh water out of sea water, which is 3½ percent salt, is still distant. For irrigation purposes 12 cents is the desired goal.

A vapor compression distillation method has cut the cost to 60 cents. An American Research & Development Corp. subsidiary, Ionics, Inc., has developed a process for distilling brackish water by using an electric current, which transfers the salt through plastic membranes. But high cost continues to be the deterrent to volume use.

As population rises and demand increases the need for a national water policy is finding frequent expression. President Eisenhower, in signing a water bill last month aimed to promote cooperation between the federal government and local agencies, said it was deficient in its proposals. The survey now being undertaken can pave the way for a thoroughgoing program affecting this vital resource fair to all the areas and interests.

Planning — A Necessity

The International Engineer, Aug. — The persistent Kansas drought, starting in 1952 and continuing into 1955, may continue for several years, Dwight F. Metzler, Chief Engineer of the Kansas Board of Health, ventured to assert June 14 at the national convention of the American Society of Civil Engineers at St. Louis, Mo. Inadequacies of water supply in many cities were charged by Metzler to lack of foresight and planning.

. . . "Past rainfall and stream flow records clearly show that droughts recur and that the present drought may not be broken for several years," said Metzler.

. . . "At the same time, steady population growth and the increased per capita use of water makes continually growing demands upon water pumping, treatment and distribution facilities. These droughts are the periods for which water works designers must prepare. To conserve the fresh water, increasing attention to the treatment of sewage and industrial waste will be necessary.

. . . Metzler stated that the present Kansas drought has compelled 62 cities to provide emergency water supplies at a total cost of $4,300,000. Farmers spent an additional $7,400,000 to haul water during the first ten months of 1954, he added. "Of the 420 municipal supplies in Kansas, 175 have been short of water and 169 restricted water use by rationing," he reported. "Most of the distress occurred in Eastern Kansas where ground water is scarce and many cities depend on surface sources. During this period, competition for water has been keen, with some conflicts between cities and farmers. Upstream irrigation has threatened several city water supplies. . . ."

Los Angeles Examiner, Oct. 27—Scientists from 33 foreign countries as well as 800 experts from the United States will take part in a world symposium to attempt to learn how to harness the sun's energy for man's benefit in Tucson and Phoenix.

The symposium is sponsored by the Association for Applied Solar Energy, Stanford Research Institute and the University of Arizona.

Sir Edward C. Bullard, director of the National Physical Laboratory, Teddington, England, will be the principal speaker at a luncheon on Tuesday. . . .

'OPERATION' STANDARDIZATION

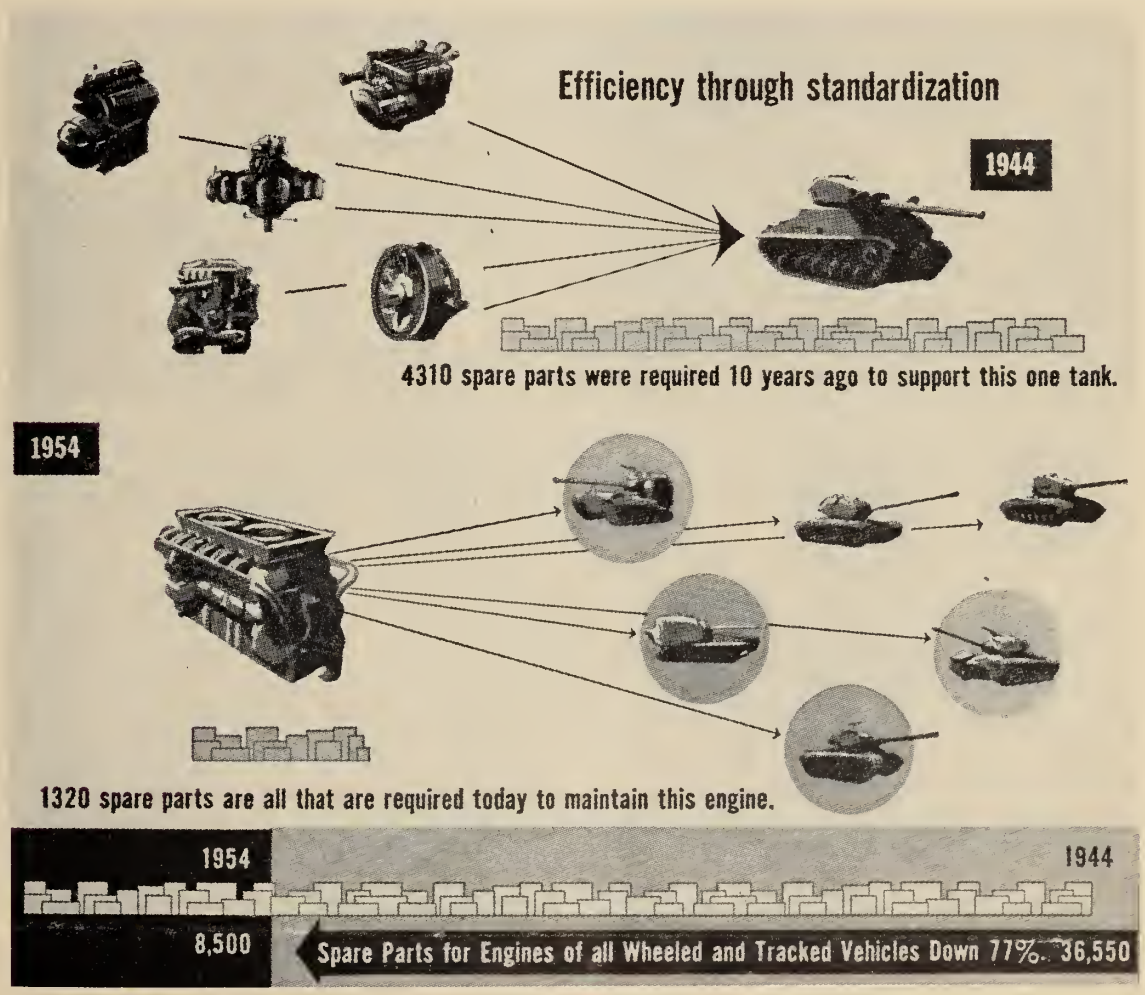
While the talk of modern war with its A- and H-bombs, jet planes and 'super' carriers make the headlines, the U. S. Army has been quietly developing interchangeable and standardized engines and spare parts for tanks and all wheeled transport. Considering the circumstances, the Army has made much progress since the new program of standardization went into effect in 1952.

As a result of this development, it has been possible to reduce the parts needed to keep the vehicles in operation and to interchange engines and parts, even in the combat area. In three years' time the Ordnance Corps of the Tank-Automotive Command has reduced the required engine parts for both wheeled and tracked vehicles from 36,550 to 8,500, a reduction of 77 percent.

The Second World War used 48 different engine and 48 transmission types. Today there are 13 types of each. Electrical components have dropped from 1418 to 114 and that includes batteries, starters, regulators, magnetos and distributors, instruments and gauges, among other items. Light tanks once had eight types of mufflers — now they have one. One headlight assembly is used instead of the former six.

The practice doesn't stop with parts. Materials also are standardized with the purpose of conserving critical minerals. Tank mufflers previously using 18 percent chrome and 8 percent nickle stainless steels, now use one grade of 17 percent chrome stainless steel. This practive saves 400,000 pounds of nickel.

During the last war, eight different types of grease were used on tanks. Now one multipurpose grease developed for use on both artillery and automobiles lubricates the machinery as effectively as the eight did before — and does it from an arctic 65° below zero to a broiling tropic 125°.


Efficiency through standardization
1944
4310 spare parts were required 10 years ago to support this one tank.
1954
1320 spare parts are all that are required today to maintain this engine.
1954
1944
8,500
Spare Parts for Engines of all Wheeled and Tracked Vehicles Down 77%. 36,550

—Photo courtesy Steelways

One of the most interesting developments is the new family of engines. For example, in 1944 five engines were needed for one medium tank, with 4310 spare parts required to keep the vehicle rolling. One engine now powers six different tanks and needs only 1320 spares. One basic component design in two cylinder sizes can be adapted to construct a wide variety of power plants, whose main parts are interchangeable.

Standardization has made it possible for the Armed Forces to make repairs on its track and wheeled vehicles more easily and to reduce maintenance problems to a minimum. Through this problem there has been a considerable saving in irreplaceable resources. While it was often thought that standardization would freeze creative innovation, actually progress is speeded up. A new design with emphasis placed on interchangeable parts and engines goes quickly into a variety of vehicles, tanks and armored equipment, but the old design required many different parts and engines which could only be used as specified by the various vehicles and equipment. Standardization has brought about the incorporation of the best features with all the various types using these identical basic parts. Long delays in retooling and redesigning are eliminated. The end result is greater efficiency.

Here, in a small way and under peacetime conditions, has been a 'super weapon' at work. Its overall importance to this Continent is staggering to contemplate. And yet it is only one application to a specific problem of an industrial technique — the technique of mass production. There is no reason why standardization could not be applied to every phase of our technological society.

There Ought to be a Law

Dear Senator:

I've been reading and hearing a lot about the government being burdened with billions of dollars worth of farm surpluses, which it is having trouble to get rid of. It seems, as near as I can figure it out, that the farmers raise more than the people can afford to eat at these prices, so the government has to buy up the surplus or else the farmers wouldn't have enough to keep them busy.

I also read where the government has been trying to give the surpluses away to foreign countries, but they don't seem to want our food. I think it's because they don't raise enough crops for their own use, and they're afraid if we sent them some of ours it would make their own farmers so lazy they wouldn't raise as much as they do now, and the people might starve if things got bad again or we quit feeding them. I think this is a silly attitude, because it doesn't help us to get rid of our overproduction, and these foreigners might just as well have it. Besides we need our storage bins for next year's crop.

I have an idea that will solve the problem. As I remember it, most of the foreign countries owe us a lot of money and they aren't paying it back very fast. Now, if you would just pass a law that would make these countries either pay back the money they owe us or take our farm surpluses, I think they would be more reasonable about it. Nobody likes to pay back the money they borrowed, and I believe countries are the same way. In that way, we could get rid of our big headaches and the foreigners would learn to eat more, and they would start asking why their own farmers can't raise food like the Americans can. Then their farmers would have to get busy and raise good crops or else their governments might investigate them.

Sincerely,
(Signed)
Beetal Brayne

P.S.: I have another idea if that one doesn't work well enough. We could load our bombers with the food surpluses and send them over the Iron Curtain and 'bomb' the Russians and their satellites with it. Those poor hungry people would be so busy gathering up the food and hiding it away they wouldn't have time to start another war. I think it would cause more confusion in the Kremlin than if we dropped real bombs, because that would just make the people mad and they would want to fight all the more. But if we 'bombed' them with food, they would stuff themselves and be contented and lazy instead. Who wants to fight on a full stomach? Besides bombs cost a lot of money, while the food is already paid for, and that would be a big savings to the government. Please think it over and pass any law that is needed to make it legal.

B. B.

The Readers' Corner - - -

QUESTIONS FROM OUR READERS—(Editor's Note: Readers of The TECHNOCRAT are invited to submit brief questions on matters pertaining to the social problem of North America or on points of Technocracy's program which are not entirely clear to them. Questions must bear the signature and address of the writer; this is for reference only and will not be used in the magazine. The Editor reserves the right to select the questions to be used and to change the wording, if necessary, for brevity or clarity.)

Why doesn't Technocracy approve of running the Technate by the democratic method?

Before we can answer this question we have to clear up a confusion in terms. Democracy, government by the direct voice of the people, is not in operation in any country in the world. It is not anywhere being actively supported as an ideology. The word is not mentioned in the Constitution of the United States.

When we Americans talk about 'democracy' today we are actually thinking of a representative government, that system of political government in which representatives are elected by popular franchise. These elected representatives then make the laws. It is supposed that they make them to suit the people who elected them, but it seldom turns out that way.

The basis then of what we Americans call the 'democratic method' is that the elected representatives of the people meet and attempt to solve the problems of the American complex on the basis of what they believe is the best solution, providing, of course, that they are honest in their behavior. 'Representative' government is government by opinion. And, whatever way it is organized or set up, government by opinion just isn't accurate enough to cope with the pressing problems of today.

Any economy of abundance on the North American Continent will involve the operation and coordination of the greatest assembly of productive equipment and man-power that the world has ever seen. It will have to be responsible every year for all of the production and distribution of the entire Continent. It will have to plan every operation, man every job that exists. Its decisions will have to be accurate, certain. This cannot be done on a basis of opinion. It cannot be done by politicians, elected or otherwise.

The technologists that administer the Technate cannot be elected any more than atomic scientists are elected and for the same reason. Their function is not political. Their function is technical, to control the operation of energy-consuming devices. Their appointment will have to be made on the basis of their proven ability, their training, their temperamental fitness.

The well-being of the citizen, the consumer, is protected by the basic design of the Technate itself. With a guaranteed income and a guaranteed freedom from toil from birth to death, the well-being of the citizen will be a natural and inevitable by-product of the efficient operation of the Technate.

How would labor troubles be handled in a Technate?

It is most improbable that there would be any labor troubles in a Technate. Labor troubles commonly include disputes about wages, hours, working conditions, union jurisdiction and union practices such as 'feather-bedding' or the creation of artificial work opportunities. None of these problems will exist in a Technate.

In a Technate there are no 'wages.' The citizen's income does not come from the sale of his man-hours but from his per capita share of the total production available for consumers' goods. Hours of employment in a Technate will probably be fixed at four per day, four days out of seven. Working conditions will be the best possible since there will be no economic reason for scrimping on them.

There will actually be no real need for unions in a Technate. Since only those individuals between the ages of twenty-five and forty-five will be required to work and because nothing can be gained by working more hours, there will be no need for scheming ways to create artificial work. Labor troubles, like almost all of the difficulties under which we labor at the present time, are natural results of a scarcity economy. In an abundance they will disappear.

Technocracy will not abolish labor unions but will eliminate the need for unions. Having no 'cause' to fight for, unions will naturally disappear.

The Valley News, Oct. 18 — Modern machinery in India is putting the elephant out of work. Before the war an elephant cost $4000 — the price is now $600.

Political

Freedom to Suppress

Secrecy in Government increased during the Truman and Eisenhower Administrations and "is now worse than at any time in recent years," the American Civil Liberties Union asserted recently. A study by the group said Eisenhower's directive barring certain testimony at congressional hearings has been used to hide information the public should have.

'Russian' Arms in Latin America

The United States for many years has been scattering arms around the world in prodigal fashion. That some of those arms have later been used to kill American soldiers is no secret, though it is impolite to mention it. One of the latest sales for a token price is that of eleven jet fighters to Rafael Leonidas Trujillo, the unsavory dictator of the Dominican Republic, who has as much bona fide need for them as for a rocket to the moon. . . .

When the Tsar fell we tried to buttress up the Kerensky regime with a loan to be spent for armaments in the United States. A large quantity of Russian-model rifles were manufactured, but by the time they were ready Kerensky had passed into limbo with the 1917 Bolshevik revolution. Various efforts were made by Secretary of State Bryan to palm these guns off for a good price on Latin American governments. Finally, when President Alvaro Obregon of Mexico faced a serious armed revolt, the Russian arms were hurried to him to help put down the trouble.

Shortly after that, however, the Calles government got into a bitter controversy with the United States over oil rights. Then the same Russian rifles, three boatloads of them, by some hocus-pocus appeared in the jungles of Nicaragua in the hands of Augusto Sandino, then fighting the invasion of his country by American marines. Thus the mothers of dead U. S. marines can have the satisfaction of knowing that their sons were killed by rifles of American manufacture.

Those guns have been floating around Central America ever since. Not long ago a Central American dictator pulled a fast propaganda hoax by announcing that a foreign submarine had landed Russian-made arms on his coast. Duly exhibited were some rusty survivals of the Kerensky-U.S.-Obregon-Calles-Sandino rifles.

Although the United States managed for some years to shut off all shipments of arms to the Arbenz government in Guatemala, some small shipments came in from France and Italy. . . . Those arms in good part were American-made, scattered over Europe as lend-lease or surplus equipment and in other ways. By the same token the well-heeled invaders of Guatemala from Nicaragua and Honduras were bountifully supplied with arms of American manufacture.

—The Christian Century

Favored Few

Labor, Oct. 22 — . . . How would you like to sell something to the government at a high price, keep that something right in your home, buy it back from the government a few days later, at a much lower price, and thus make a large unearned profit without doing anything to earn it?

Nobody's going to offer you that kind of a deal, but that's because you're not one of the big butter or cheese manufacturers favored by Agriculture Secretary Ezra T. Benson

This week Congressman L. H. Fountain . . . head of a House investigating committee, revealed that Benson recently put through a buy-and-sell-back deal which netted a few butter companies a quick and easy profit of about $290,000.

A few months ago, Benson handed cheese manufacturers $2 million at the taxpayers' expense, in the same kind of a deal. Comptroller General Joseph Campbell, who is the financial "watchdog" for Congress, called that cheese deal "unauthorized and improper." Then Benson asked Attorney General Herbert Brownell to determine whether the government should take legal action to get the money back. . . . Incidentally, neither deal added a single cent to the income of the dairy farmers, whose interests Benson is supposed to represent. . . .

Why the Haste?

It took the United States 15 years to recognize communist Russia, but it took the Department of State less than 2 days to recognize the present fascist regime of Argentina, the fastest recognition ever given to another nation in the diplomatic history of the U. S. A. It must be that the foreign agents of an ecclesiastic nature did not lose any time in making their influence felt in the State Department and in Washington. Of course, the fact that American business has a $425 million stake in Argentina made the decision of quick recognition by the State Department an easy one. The American people should begin to realize that the business, ecclesiastic, and political interests are not interested in the social welfare of this nation or any nation, but they are concerned with perpetuating their advantageous positions under the Price System. The above interests are going through their last ditch stand in an effort to prevent and retard social change. Communism and fascism have nothing to offer the high-energy civilization of this Continent. Only Technocracy has the design which is in accord with the rapid technological change of today. The fight is on. Where do you stand?

Americana

Disparity of Farm Incomes

Labor, Oct. 22 — . . . Senator Paul H. Douglas, (Dem., Ill.) speaking in Chicago, took up the challenge to offer a positive program to meet the farmer's current crisis. After noting that net farm income has tumbled over 20 percent since 1952 and making several suggestions for increasing the market for foods, Douglas tackled the question of farm price supports.

The present program, he pointed out, "chiefly benefits the larger farmers. A quarter of the farm price support benefits go to 2 percent of the farmers, or about 100,000 of the 5 million farmers. Another quarter go to 9 percent of the farmers. The remaining 89 percent, or nearly 4½ million farmers, get the other half."

'The Law's the Law'

Cleveland Plain Dealer, Oct. 31 — A dairy farmer in a northwestern Pennsylvania community says nobody's going to tell him how to run his acres —not even the government. And here's his gripe—he raises some wheat to feed the cattle and improve his pastures.

His troubles started last year. The government —with its "blasted forms and all kinds of red tape," as he puts it — told him his wheat acreage allowance was nine acres. He put in 24 acres. The Venango County agricultural stabilization and soil conservation committee sent two members to talk to him. One said:

"The law's not popular up around here, but the law's the law."

The committee reported him to state headquarters. The case went to Washington. It was decided he owed $357.28 in penalties. The attorney's office in Pittsburgh added $47 in costs. It sent the farmer a bill for $404.28. He said he wouldn't pay. The U. S. attorney sent him a note saying that if he didn't, his farm could be sold to raise the amount; that there was a lien against his property; and that it would be enforced.

The government sat back and waited. So did the farmer.

His wife says: "We think this is worth fighting for. If you can't afford to buy wheat for the cattle, you raise it yourself. That's what a farm is for. He ought to be able to run his own farm."

He points out that he never asked for subsidy and says:

"I have never had any part of subsidy. I have made my own way. I'll be darned if I think this allotment and subsidy business is right or American. Sometimes it makes me awful hopping mad, and at other times, it just takes the heart out of you. It's like building a scaffold to hang yourself."

Does the Market Demand?

Washington, Oct. 24 (AP) — Secretary of Agriculture Benson announced today the government expects to buy approximately $85,000,000 worth of pork and lard in an effort to encourage consumption and assist farmers in adjusting their production to market demands.

He said the purchase program would probably involve the buying of about 170,000,000 pounds of pork and 30,000,000 pounds of lard to a total expenditure of approximately $85,000,000.

. . . Some farm and congressional leaders have been insisting that the government begin a pork-buying program to help the hog market. Hog prices are now about 30 percent lower than a year ago.

'Point of Order'

. . . At the American Legion's conference at Miami, delegates thunderously voted down a right-wing resolution calling for U. S. withdrawal from the United Nations. The vote came after marked appeals from "rank and file" delegates . . . denounced the withdrawal idea as absurd. . . . This result contrasted sharply with the tactics used to put across other controversial resolutions, accepted without floor debate.

. . . The convention denounced UNESCO, the United Nation's Educational, Scientific and Cultural Organization, for distributing "subversive educational materials," and called for abolition of the U. S. National Commission for UNESCO. Through a parliamentary maneuver, no floor debate was allowed on this resolution. When the Iowa department commander asked that his delegation be ordered as voting against the resolution, he was ruled out of order.

. . . The Legion's tangle with UNESCO dates back to 1953 when its powerful executive committee claimed the UN agency was being infiltrated with Communists and devoted to promoting world government. Later a special legion committee headed by former National Commander Ray Murphy spent 18 months digging into the question. It concluded that the charges were utterly baseless and that UNESCO was actually doing valuable work.

Moreover, said the Murphy committee, the anti-UNESCO charges stem from a nation-wide "hate" campaign undertaken by certain fascistic "patrioteers for profit." The originator of the campaign, it said, is one W. Henry McFarland's Nationalist Action League, designated as "fascistic" by the Attorney General of the U. S.

Despite this, the Legion leadership rammed through its anti-UNESCO resolution based on these discredited charges. . . .

. . . Outgoing Commander Seaborn P. Collins whipped through the Legion's executive committee a report denouncing the Fund for the Republic, a civil liberties research group financed by the Ford Foun-

dation. This report was not even submitted to the convention delegates.

In approving the report, the Legion executive committee members heard only a summary of it read to them by James F. O'Neil, publisher of the American Legion magazine, who wrote the report himself. Irving Breakstone, former Illinois Legion commander and a defender of the Fund, was not heard on the other side.

The report claimed the Fund for the Republic is "spending its money largely on projects and individuals which have definite left-wing biases." It bore down especially on Fund president Robert M. Hutchins, a former head of the University of Chicago, charging that Hutchins has never at any time shown the slightest interest in, or concern over, Communist subversives."

By contrast, at this very time another ex-servicemen's organization — the American Veterans Committee — was awarding Hutchins its annual Bill of Rights citation. At the presentation ceremony Hutchins recalled that almost a third of the Fund's expenditures so far have gone "to the study of various aspects of communism in the U. S."

The Fund, he affirmed, "is against communism. It is for methods of dealing with communism that safeguard the principles of the Declaration of Independence and the Constitution." Referring to the Fund's critics, Hutchins said: "I can only conclude that they are afraid of the truth."

Price System's Continuance Depends on Constant Debt Expansion

Wall St. Journal, Sept. 29 — The average level of non-farm wholesale prices has reached the highest point on record. The previous peak was in March of 1951. . . . On new cars, on TV sets, on furniture —price increase reports spreckle the pages daily. Basic industrial materials creep upward.

. . . The really inflationary forces that lifted prices some 50 percent within three years at that time have not been born anew today. The nervous inventory building that helped hoist prices 15 percent in 1950 is not now in evidence.

While some prices rise, the whole field of basic agriculture staples is sagging notably. Food is cheapening.

With durable goods output huge and bitterly competitive, it is anybody's guess how much of the announced price increases on such merchandise can be passed to the ultimate consumer on the retail front.

. . . During World War II the money supply was greatly multiplied through the huge expansion of the Federal debt. Production of goods expanded too— but not nearly so much. Thus:

	1939	1946	Up
Fed'l debt, billion dollars	47.6	259.4	445%
Money in Circ., bill. dollars	7.5	28.9	285%
Indus. Production Index	58	90	55%

. . . Since 1946 the Federal debt and dollars in circulation have risen only slightly — and the supply of things to buy, meanwhile, has jumped just as much as it did in 1939-1946. Thus:

	1946	Now	Up
Fed'l Debt, bill. dollars	259.4	278.4	7%
Money in Circ., bill. dollars	28.9	30.3	5%
Indus. Production Index	90	140	55%

The Price System is trying to balance production and distribution without any method of mensuration, so is it any wonder no one knows anything. It is like trying to build a modern highway without measuring either sand or cement, just dumping some in, mixing it up and then 'praying' that it comes out all right.

The Cleveland Trust Co. Business, Oct. 16 — . . . As compared with earlier years, today's instalment debt in dollars (as of Aug. 31 it was $26.2 billion, an all time high) looks very large indeed. For example, it was nearly five times as great as in 1940. However, such comparisons do not mean much. Nearly all business indicators expressed in dollars are far above their levels of 25, 15, or even 10 years ago, reflecting both price inflation and the expansion of our economy.

A better yardstick is the ratio of debt to income, to determine whether the first has advanced faster than the second. At the end of 1929 the ratio of instalment debt outstanding to total personal income after taxes was 3.8 percent, or $3.80 of debt for each $100 of annual income after taxes. In mid-1941 the pre-war peak of 7.0 percent was reached. The latest figure (August 31) is about 9.5 percent, which is noticeably above that of 1941 and much greater than in 1929.

. . . Considerable light on the distribution of the debt is provided by the 1955 Survey of Consumer Finances, conducted by the Federal Reserve System in cooperation with the Survey Research Center of the University of Michigan. That study, based on a carefully selected sample of consumers, indicates that 57 out of each 100 "spending units" (roughly equivalent to families) had no instalment debt at all in early 1955. At the other extreme, 10 out of each 100 were devoting from 20 to 39 percent of their incomes, after taxes, to payments on instalment debt; and an additional 2 in each 100 were paying 40 percent or more. Also, a larger proportion of the middle-income families had more instalment debt than those in either the lower or higher brackets. . . .

According to the Federal Reserve Board report in the Oct. 3rd issue of the Wall St. Journal, automobile instalment credit had risen to an all time high of $13.5 billion as of August 31.

In October 1956 cars were advertised thusly: "First time ever! 'year end' bargain on a new car the very first month it's introduced." This would seem to indicate that the automobile racket is getting rough.

The RESEARCH BULLETIN

NEWS ITEMS OF SIGNIFICANCE
QUOTED FROM THE NATION'S PRESS

Can the Price System Afford War?

Detroit, Sept. 27 (AP) — A staff member of the Industrial College of the armed forces says a third world war would cost some four trillion dollars — 10 times as much as the last world war.

Cmdr. Eugene R. Blandin told the opening session of the college's resources conference yesterday the cost of each war since the mid-19th century has increased 10 times. World War II cost 380 billion dollars, he said.

Here We Go Again

Bonn, Nov. 12 (AP) — West Germany today launched its new Wehrmacht, putting men into uniform for the first time in more than 10 years. It called to the colors the first 101 for the 500,000-strong force to be built up by 1959.

In a simple ceremony Defense Theodor Blank handed call-up papers to the first volunteers. Blank stood under a giant replica of the Iron Cross — symbol of German military power — as he pledged that the new Wehrmacht would only be used to defend the peace and unity of Europe.

The indifference of youth was reflected in the recruiting figures. So far 173,000 men have offered to serve. Of this number, 142,000 are last-war veterans of the Nazi era, all over 30 years old; only 30,000 are youngsters. This was one reason the government decided to incorporate the semi-military frontier police force into the army so there will be about 18,000 disciplined men available when training starts the 2nd of January.

You Pay It and Higher Prices

Washington (AP) — Government losses in carrying out price supports on farm surpluses were greater during the past two fiscal years than in the preceeding 18 years of Federal farm aid programs.

The Agriculture Department reported that losses during the fiscal year ending last June 30th reached a record annual high of $799,061,000, or a daily average of more than $2,000,000.

In the previous fiscal year the losses were $419,477,000, thus bringing the total cost to the Treasury for the two years to $1.218 billion.

From the start of price support operations in the 1936 fiscal year the losses totaled $1.11 billion.

Debt of Cities Increases

Washington — The 481 cities in the United States with a population of more than 25,000 collected $64 per person last year, which is $3 a person more than the year before, said the Commerce Dept. report.

However, the spending last year of these cities increased faster than the revenue. The report said current operation expenditures rose 6 percent during the year, approximately the same as the revenue increase, but payments for construction of public works and other capital outlays were up 14 percent over the 1953 level. City debt increased 7 percent last year to a record level of $12.2 billion, a total of $196 per person.

A General Trend

Champaign, Ill., Oct. 2 (UP) — About three-fourths as many persons in Illinois are farming as there were in 1920, a University of Illinois rural sociologist has reported.

C. L. Folse said the 1920 Illinois population included about 1,000,000 farm people, one-sixth of the total population. The 1950 number had dropped to about 750,000, only about one-twelfth of the total population.

The most rapid change in the State's population occurred in the last 10 years of the 30-year period and the trend has continued even faster since 1950, Folse said.

Whose Responsibility?

Los Angeles Examiner, Oct. 9 — A spokesman for McDonnell Aircraft, St. Louis, has stated that the company has flatly rejected any responsibility in the now celebrated case of the 21 underpowered F3H Demon jet planes assembled for the Navy.

The planes, which cost the taxpayers $28,350,000 have been gathering dust on the McDonnell ramp for months — minus their Westinghouse J-40 engines. The Navy never did get around to order installation of the J-40 engines in the Demons because the powerplants have proved to be underpowered for the carrier-based Demons.

. . . McDonnell says that Westinghouse and the Navy must take the blame for the mixup because "we just built the airframe to Navy specifications and had nothing to do with the powerplant." . . .

Relaxation of Tensions

Moscow (AP) — The Soviet Union has announced that it will slash its armed forces by 640,000 men before Dec. 15. The Soviet Union announced it was taking the step with a view to further lessening international tension. Russia has been estimated to have 2,800,000 men in the army and 750,000 in the navy.

Jet Horsepower

The International Engineer, Aug. — Something new in prime mover design awaits the hands of the operating engineer! A gas generator hardly bigger than a can of soup, yet capable of producing about 850 jet horsepower, has been developed by the aircraft gas turbine development department of General Electric Company. Possible industrial applications of this gas generator . . . include use as a source of energy for rotating machinery, as a thrust simulating device for static tests of airplane or missile models.

The new model of gas generator was developed for application to guided missile propulsion systems but is claimed to be ideal for many applications where a portable, light-weight and reliable source of energy is required. Using no moving parts, the gas generator is designed to convert liquid hydrogen peroxide into a high pressure, high temperature gas stream of free oxygen and steam. This gas stream, or jet, as it is called, may then be directed against a turbine wheel and the rotative power thus generated may be used in the same manner as any turbine-generated power.

Weighing less than 3½ pounds, and measuring only about four inches long by three inches in diameter, the gas engine produces about 850 jet horsepower in its designed guided missile application. "Jet horsepower" is a term used in the rocket field to express the energy in the high velocity jet.

The horsepower from the new gas generator has been varied from as little as 50 to about 1800 by simply adjusting the incoming liquid flow rate; and operating life requirements varying from a few seconds to hours can be designed into a unit.

Political Expediency

Washington — Within the next few months, the Army Corps of Engineers and the Interior Department's Reclamation Bureau will start or resume work on 109 sizable projects for irrigation, flood control, harbor improvement, beach erosion control and power generation. The total number of new starts for the two agencies is the greatest since World War II.

In the budget proposed to Congress last January, President Eisenhower called for appropriations to start or resume work on 41 Engineer and Reclamation projects. Congress' approval of 109 was more than two and a half times the Administration request. The bill authorizing the projects was signed by President Eisenhower only under protest.

Teachers — Are Human

Better Schools, Oct. 27 — "Rarely, if ever," says the White House Conference subcommittee on teachers, "is a classroom closed because a . . . teacher cannot be found (or cannot be hired at the offered salary)."

This is perhaps the most dangerous and damning argument of those opposed to raising teacher's salaries or doing more to raise their prestige in the community.

"Why raise salaries?" they ask. "If the teachers don't like the pay, we'll find somebody else."

The "Homework" paper of the subcommittee points out the pitfalls and fallacies of this argument.

"There is a person in each classroom because the American people have been willing to 'resort to emergency measures,'" the subcommittee says. The issuing of emergency certificates to those unqualified to teach is widespread — doing double damage to the teacher supply. In addition to cheating American youngsters who are entitled to good teachers, the practice lowers teaching standards and drives away many of those who might otherwise want to enter the profession.

The teacher Paper includes hundreds of statistics showing the slack in the number of college graduates, the decrease in the number prepared to teach and the fantastic "dropout" rate of those qualified to teach but who never enter a classroom.

The committee draws an analogy between teachers and buildings. If you have the money you can buy the site and the building materials, assemble workmen and erect buildings. "But it is quite another matter to attract the interest of ambitious, intelligent young men and women. . . ."

It is time that the American people realize that the mere allocation of 'the almighty dollar' doesn't solve problems.

New Processing Methods

University of Calif., Davis, Oct. 25 — New machinery for new tomato processing methods is now under test in the food research laboratories on the University of California campus at Davis.

Experimental evaporators of various types are being used to make tomato concentrates in a project aimed at improving the color, flavor, nutritive values, and storage stability of puree and paste.

And a new experimental sterilizer is being used on the canned tomato products, according to Sherman J. Leonard, food technologist in charge of the food processing laboratory at Davis.

. . . The evaporators operate under a high vacuum at low temperatures. Under the vacuum, the water is driven off at temperatures ranging 60 degrees to 90 degrees F. This process helps keep the tomato color and flavor as well as the vitamins.

The new sterilizer whirls cans at tremendous speeds through a steam bath. It operates on a new high-short heating principle that reduces heating effects to a minimum. . . .

Consumer Credit Increases

Washington — The Federal Reserve Board reported instalment credit outstanding increased $679 million in August to nearly $26.2 billion at the end of the month. The rise compared with increases of $52 million in the like month last year and $253 million in August, 1953.

The rapid rise in consumer instalment debt (particularly auto paper) is one of the danger spots in the economy, according to many experts.

Combining both instalment and non-instalment credit, they said total consumer credit jumped $740 million during August to a record of $33.6 billion outstanding at the end of the month. This was the fourth straight month total consumer credit reached a new high.

Purchasing Power — Or?

Washington, Oct. 24 (AP) — James B. Carey, president of the CIO Electrical Workers, said today that as automation increases more money must find its way into workers' pockets or the nation faces "inevitable depression."

In testimony prepared for a public hearing of a Senate-House Economic Subcommittee studying the growing use of automatic processes in factories and offices, Carey said: "Only if consumers have the buying power to purchase the rising output of goods and services made available by the new technology will we be able to maintain high levels of employment."

"The alternative is mounting unemployment . . . inevitable depression."

Over-Population Menace

Tokyo, Oct. 25 (UP) — A Japanese professor warned today that Japan may have to go to war again because the nation's over-population is so pressing.

Prof. Juitsu Kitaoka, a birth control expert, called for free distribution of "contraceptive devices" and heavy taxes on anyone having more than three children in this overcrowded island country of 88,000,000.

Kitaoka warned that "there is no guarantee that the Japanese will not repeat the mad, desperate trial attempted during the Pacific war."

Even 'The Staff of Life'

Atlantic City—American Machine and Foundry Co. has introduced a new bread-wrapping machine with a "push-button power feature" which, it claims, permits automatic adjustments for wrapping loaves "ranging from six to 17 inches long, up to six inches high, and eight inches wide."

This new unit can wrap up to 65 loaves of bread a minute, AMF says.

Union vs. McKay

Labor, Oct. 22,—Secretary of Interior Douglas McKay . . . met in Washington this week for a conference with IAM President Al J. Hayes during which McKay flatly refused to intervene with the strike by the Machinists at his auto agency in Salem, Oregon.

. . . Hayes said he asked the Secretary to recommend to his McKay Chevrolet company "that it submit all issues in its dispute with the Machinists to impartial arbitration."

"The Secretary refused to do so, either as a government official or in his capacity as majority stockholder in the firm," Hayes declared.

. . . Meanwhile, the Machinists bitter strike against the agency moved into its 13th week. The workers were forced onto the picket lines July 26 by a McKay ultimatum that they give up their union shop and take the equivalent of a 25¢ an hour cut.

A Paradoxical Situation

Farmers in other countries may harvest a record 22 million bales of cotton this year. Cotton men say that would be one million higher than 1954, nearly one-third more than in the prewar 1935-39 average. Mexico may produce 2.2 million bales, almost eight times as much as before the war.

But Uncle Sam is trying to cut output here, yet keep a high prop under prices. Although planting restrictions trimmed U. S. 1955 acreage 14 percent, output was officially estimated at 12.8 million bales, a slender 6 percent below last year and about the same as in 1935-39.

Rising foreign output makes it tougher for the U. S. to sell cotton abroad, builds our surpluses higher. September cotton exports limp along at half the year ago level. The cotton carryover of the 1st of August reached 11.1 million bales, highest in a decade.

As long as we have a Price System, the paradoxical situation of want in the midst of an abundance will always be with us. There is no reason why we cannot maintain a balance between the production and distribution of goods and services, and at the same time provide the highest possible standard of living for every American. And the farmers of this nation better wake up to the fact that the politician does not have, nor ever will have, the answer to this problem. Abundance demands a new method of distribution.

THIS MONTH'S COVER

DASAC is not electronic and has three functions: Memorizing and recording selections in sequence; keeping an up-to-the-instant inventory; stopping containers at proper discharge racks.

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—Photo courtesy Wide World Photos

Critical Comments

A Growing National Problem

While newspapers across the country headline the 'good news' that national output is breaking all records, there is the deliberate attempt to minimize or to conceal the over-all statistics on national unemployment. Both factors of rising output per man-hour (productivity) and the constantly growing number of individuals in the job market make it evident that unemployment has become a serious national problem. One of the most serious nationwide problems is the plight of many areas where a state of chronic unemployment exists.

The level of unemployment varies greatly among communities across the nation. There are communities where unemployment is continuous and often acute even when other parts of the country may be enjoying a higher standard of living as a result of defense projects and other government spending. Out of the 132 areas identified as suffering a substantial labor surplus in July 1955, 67 localities are classified by the Department of Labor as areas with a "chronic labor surplus." In many of these areas there has been chronic heavy unemployment for a decade and longer at a time when the nation supposedly enjoyed peak prosperity.

It is the dynamic pace of technological change which directly or indirectly causes disemployment in the modern American communities. Our real problem is not one of chronic unemployment and the creating of more jobs, but the reduction of man-hours of each participant and the application of a method of distribution where every American can consume the abundance of goods and services our technology can produce.

Investment Imperialism

Washington — American firms and individuals increased their investments abroad last year by $2.8 billion, the Commerce Department reported. This compares with the $1 billion increase in 1953.

In its monthly magazine, Survey of Current Business, the department said private U. S. investment abroad at the end of last year totaled $26.6 billion. A year earlier private foreign investment came to $23.8.

At the end of last year U. S. direct investments in Canada totaled nearly $6 billion, of which about $2 billion was in mining and $2.5 billion in manufacturing. Of the total $6.3 billion directly invested in Latin America by American firms, the department said 40 percent was in mining and oil and more than $1 billion each in manufacturing and public utilities. U. S. direct investments in western Europe increased to $2.6 billion at the end of last year, including $1.4 billion in manufacturing and $700 million in petroleum enterprises.

Oil investments in the Middle East continued to expand last year with further increase expected this year. Elsewhere, it said, there were sizeable additions to direct investments in the Philippines, India, and Australia.

The facts show that the real objective behind the State Department's policy to contain communism is to make the world safe for private investment. This policy might be alright for the vested interests of this country, but for the majority of Americans and the youth that has to fight and die to protect these interests, it is neither remunerative nor heroic. Surely we can find a better basis for our foreign policy, at least one that is more forthright. As a matter of fact, we could on occasion act in a manner unbecoming a diplomat toward the fascistic nations as we have done many times toward communistic nations. We might even tell the Vatican that there is a difference between politics and religion.

Defense or Dollar Loyalty?

During World War II the federal government gave speedy tax write-offs supposedly to encourage war production. This tax program was re-established in 1950 after the outbreak of the Korean fighting. At the beginning and during World War II the government found out that to get war production started it had to finance the necessary expansion and to continue bribing industry and business in general with cost plus and speedy tax write-off in order to meet production goals of war material. At no time did industry and business voluntarily offer its facilities or services to the government to expedite the war. While the youth of America was conscripted to defend their country, the government did not conscript the nation's machines, materials, and money. As a matter of fact, the government built approximately 70 percent of all new war production plants during World War II. Tax write-offs during that time covered about $7.3 billion worth of war production industries.

Since 1950 to the present almost all 'defense' production, including the erecting of additional defense production facilities, has been done by private industry with the government paying most of the bill. In the process the government has granted special tax certificates covering an average of 60 percent of $30.5 billion worth of production facilities. It has been through tax write-offs and special favors from the government that Big Business has been

able to cover up its mistakes and survive. It is obvious that the present defense program is predicated on the preservation of the Price System and maximum profits for Big Business, not upon the defense of this nation and its people. The Total Conscription of men, machines, materials, and money would provide an adequate defense of this nation and this Continent, and would be the best possible way toward making peace a reality.

Man Against Nature

Paris, France, Oct. 1 — In five years Mother Earth will be unable to nourish her 2,600,000,000 children unless man stops destroying nature, warns Roger Heim of Paris Museum of Natural History.

"Every day 110,000 babies are added to the population of the globe, but the world's food fails to develop in ratio," says Heim. "Already the diet of the earth's dwellers is 79 percent deficient in calcium, 52 percent in iron and 83 percent in magnesium."

Man has propagated himself without stint, from an estimated 500,000,000 human beings in 1650 to 1,600,000,000 in 1900. Today, Heim puts the world's population at 2.4 billion, with a likelihood of 2.6 billion in 1960.

Man has been ruthless in exterminating the earth's bounty and natural equilibrium.

While the beginning of farming and animal breeding in Asia Minor and Egypt 7000 years ago made possible the birth of great civilizations in the west, it also led to the irreparable destruction of huge forests in the Mediterranean basin.

By burning 1000 acres of timber land in order to cultivate three or four, as European colonists still do in their tropical territories, we compromised the soil dangerously.

Trees could not grow on the scorched earth, and the rains carried away the rich topsoil. The naked soil then fell victim over tremendous expanses to erosion, "cancer of the earth," says Heim. And over-pasturage had the same tragic results.

He calculates that during the last several centuries alone, in the laying of highways, roads, and the construction of cities and towns, man has replaced trees and fields with cement over an area equal to that of France, Italy, Switzerland, Belgium, Spain and Portugal.

Man has been no less destructive with animals. In the nearly 2000 years of the *Christian era,* 100 species of mammals have disappeared. Significantly, 40 of these species became extinct between 1900 and 1950.

Pharmaceutical products of factories pollute rivers and poison millions of fish. Man is even polluting the great oceans by dumping into them millions of tons of fuel oil residue every year.

World Production Increases

World industrial production has increased steadily during the past nine years. Since 1948 there has been a steady increase in the output of factories and mines which includes such important items as cement, aluminum, crude oil, steel ingots, electricity, lead, copper, coal, tin, and industrial products. The increased production has brought a decline in American exports and an increase of foreign imports into this country to compete with American produced goods and services. And as the result of increased world production, it is becoming more difficult for the United States to dispose of its production which already has reached mountainous proportions. And to quote from the source which carried this information (but not with the same intention), "And their business recovery was stimulated no little by American dollar aid."

Facts in Brief

Without the creation of debt the economy of this country would fall like a 'rope of sand.' The national debt is a tremendous $278 billion, and becoming increasingly unbalanced. Bank loans to business and farming at $23.5 billion are $2 billion above a year ago. Consumer borrowings are above $32 billion, a hefty $3 billion above the September figure last year. And home buyers are $80 billion in debt, up approximately $5 billion in a year. Let anything happen to this debt creation or the purchasing power of the American consumer, and the results will make 1929 appear as a year of prosperity in comparison.

The 500 largest corporations employ 44 percent of all the workers and own 56 percent of all the assets in manufacturing and mining. Bigness in business is 'good' for the American people, but bigness in government is 'bad' for the people. In case you haven't heard, it is competition which has made America great.

If all the registered motor vehicles (61 million) in the United States were lined up bumper to bumper, the line would stretch from New York to San Francisco about seventy times. It is the impact of machines which is forcing social change toward a technological solution to the problems at hand. Political edicts only compound the tangle of an already confused situation.

Each American man, woman and child, it has been recently estimated, now has five times as much horsepower at work for him as at the turn of the century, and no less than 2,000 times as in 1800.

The promoters of the Price System will do anything to keep the system going, especially if the expense is defrayed by the American taxpayer. In the 10 years since World War II, the United States has made grants and credits to foreign countries exceeding $50 billion. Who says there is no Santa Claus?

Hog prices so far this year are almost 30 percent below 1954, and further declines are expected. But with the abundance of pork there have been no bargains when the consumer makes his purchase at the super market. And the cost of living has now reached a previous high. Well — what do you expect — isn't this what you have been voting for?

Because of the many mergers (new plants and equipment plus automation) a great number of executives are being downgraded or squeezed out of a job. These mergers are taking a high toll among 'middle-management' executives, especially in the $15,000-a-year class. Of course (for the want of a better excuse) these 'specialists' can't be relocated overnight into another job (because the same thing is happening in other industries as well). Well — it won't be long until we are all in the same boat, the army of disemployed.

Many people might be surprised to know that withdrawals from commercial banks during the year amounted to 92.2 per cent of new deposits. The banks' net deposits were only $7.80 for every $100 taken in. These figures debunk the propaganda that savings of the American people can give a high level of stability to the economy for many years to come. Most Americans have little or no savings to fall back on when they need it or in case of an economic emergency. In spite of all the ballyhoo about thrift in this country, we might as well face the fact that saving has become a lost art.

Statement required by the act of August 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233) showing the ownership, management, and circulation of

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1. The names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Managing Board, 8113 S. Vermont Ave., Los Angeles 44, California; Editor, Kay Dunagan, 8113 S. Vermont Ave., Los Angeles 44, California; Managing Editor, none; Business Manager, Marjorie T. Clouse, 8113 S. Vermont Ave., Los Angeles 44, California.

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5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

Marjorie T. Clouse
Business Manager

Sworn to and subscribed before me this 8th day of October, 1955.

(Seal) Docia B. Hazel

(My commission expires Sept. 22, 1957)

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TECHNOCRACY

North America's Only Social Dynamic

WHAT?

Technocracy is the only North American social movement with a North American program which has become widespread on this Continent. It has no affiliation with any other organization, group or association either in America or elsewhere. The basic unit of Technocracy is the chartered Section consisting of a minimum of 50 members and running up to several hundred. It is not a commercial organization or a political party; it has no financial subsidy or endowments and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are $6.00 which are paid by the member to his local Section. Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHEN?

Technocracy originated in the winter of 1918-19 when Howard Scott formed a group of scientists, engineers, and economists that became known in 1920 as the Technical Alliance — a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934 Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundation of the present Continent-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHERE?

There are units and members of Technocracy in almost every State and in every province in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces. Members of Technocracy are glad to travel many miles to discuss Technocracy's Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHO?

Technocracy was built in America by Americans. It is composed of American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this Continent. Membership is open only to American citizens. Aliens and politicians are not eligible. (By politicians is meant those holding elective office or active office in any political party.) Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher, or housewife—so long as you are a patriotic American—you are welcome in Technocracy.

The TECHNOCRAT

Offering to the American public a medium by which it can learn the facts regarding the transition period in which we are moving toward a New America of technological abundance.

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It becomes imperative that the conduct of human affairs be dominated by science, the physical knowledge of the world in which we live. In the passing of the old and the instituting of the new, human conflict will become the bitterest in history. Science is hated and feared by ecclesiastical institutionalism, by corporate enterprise and political parties. The fear and hatred that will be directed by these against science and its technological application will be far greater than those the Inquisition hurled against all the accumulated heresies.

— SECTION STAMP —

The TECHNOCRAT

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NEWS MAGAZINE

Whole No. 177

25 CENTS

The TECHNOCRAT

MARCH, 1956

Editorial

TECHNOCRACY'S TIME

'More powerful than armies is an idea whose time has come!'

—Victor Hugo

At long last, the vindication of Billy Mitchell is being dramatized on the screen in 1956 whereas Billy Mitchell's stand for a Unified Command of the Armed Forces and the efficacy of aircraft was vindicated on July 5, 1942 by the operations in the Aleutians.

Political bigotry within the government retarded the development of Aviation from its inception, even after visual demonstrations of its operational function of opening a new highway around the world which required a new system of defense — an Airway.

Technological abundance on this Continent is opening the door into a new social order which requires a new system of operation — Functional Methodology. The political leaders of government are not trained to analyze the technological problems which require technical techniques in governance. This can be directed only by personnel trained to meet all the problems of this new technical era.

In 1919-1920, Howard Scott, Director-in-Chief of Technocracy Inc. directed a survey of the resources, the energy potential and the accelerating use of extraneous energy on this Continent. This survey revealed the obsolescence of the Price System method of distribution which is based on human toil. Therefore, a new method of distribution based on the use of extraneous energy had to be designed. Howard Scott approached the problem scientifically, and arrived with a solution — functional operation of the North American Continent as an entity. To explain the problem and its solution to the citizens of North America, Howard Scott organized Technocracy Inc. on a continental scale.

The march of events is constantly vindicating Technocracy's stand that the America of tomorrow will have to abandon political administration of its governmental affairs along with the Price System operation so that America's physical equipment can operate on a continuous full-load basis with maximum efficiency and conservation of the natural resources.

Levine's biography of Billy Mitchell relates a ridiculous incident which illustrates how men often suffer very severely in their attempt to maintain the status quo and their desire to evade change: General X of World War I did not believe Air Power effective. After arriving at his hotel in France, and starting to prepare for his bath, the alarm sounded for an air raid; and the French General called to him to run to a cave while there was yet time. General X replied that he did not think Aircraft could do very much, and walked to the window — 'just as a 30-pound bomb hit in the street below, and smashed up the front of the building opposite, demolished the front of the hotel and blew the window casing in all over General X. The impact of the blast knocked him across the room through the bathroom door and into the tub, with the window casing around his neck like a necklace and there the hotel people found him when they came running to see if he had been killed.'

General X, like too many people of today, think they can maintain the status quo by forbidding the contemplation of change, for after his experience he suggested that 'all aircraft should be interdicted by international agreement.'

Billy Mitchell understandingly held firm to his idea in the face of obstacles and even of disgrace of court-martial *for the good of his country.* Those who understand Technocracy's analysis and synthesis are holding firm knowing that it is an idea whose time has come because it is the only idea which is in accord with the era in which we live — the era of technological abundance.

Join Technocracy now!

THIS MONTH'S COVER
Turn to page 16

March, 1956

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Whole No. 177

Book Review . . .

'Hidden History of the Korean War'

(To many readers of Americal liberal publications—the Nation, New York Post, PM, and Daily Compass—I. F. Stone is well known. A journalist of the independent left, Stone has a considerable following. To the average American reader he will be, of course, quite unknown. During 1950-1951, *Stone, working out of Paris, began to study the press reports of French and British papers, as well as those from the U. S. It was then that he first began to notice discrepancies between the communiques sent out by MacArthur's headquarters, and dispatches by experienced newsmen. Further inquiry led to the complete re-evaluation of the Korean war and eventually to the publication of this book, 'The Hidden History of the Korean War,' of which the following is a review.*

Stone begins by throwing considerable doubt on whether the invasion was really a surprise, as claimed by MacArthur and the Pentagon. In this connection a brief chronology of events leading up to the war presents an eye-opening picture. It was a well known fact in Washington, Tokyo, and Seoul that the North Koreans had for months been preparing for possible invasion, but these plans had not been completed when fighting broke out.)

IN January, 1950, South Korea's chief of staff informed the U. N. Commission 'he believed the aggressive plans of the North Korean authorities to be mature.' In February he gave the Commission further data on increased North Korean strength in tanks, armored cars, and planes. In that same month Congress passed the Korean Aid Bill, which carried a proviso that 'aid would be terminated in the event of formation of a coalition government which includes one or more members of the Communist party . . .' On March 31, Syngman Rhee issued a decree postponing elections until November. On April 7, Acheson warned Rhee of loss of American aid unless elections were held on schedule. On May 3, the Nippon Times frontpaged a story 'Reds to force U.N. to Quit South Korea, Connally Predicts.' On May 4, Acheson 'declined to say whether the U.N. might have to abandon South Korea to Russia.' The same day Rhee stated in an interview 'Senator Connally must have forgotten that the U.S. has committed herself and cannot pull out of the Korea situation with honor.' At the same time Rhee appealed for planes, saying 'May or June may be the crucial period in the life of our nation.'

On May 10, South Korea's Defense Minister held a press conference in which he spoke of 'North Korean troops moving in force toward the 38th parallel.' On May 12, the U.N. Commission held a hearing to obtain information on the 'degree of imminence of invasion.' On May 30, the first free South Korean elections were held. Rhee supporters retained only 45 of the 210 seats. On June 9, Tokyo received an intelligence report showing a marked buildup of North Korean forces. This was confirmed June 13. The same day a group of U.N. field observers began a 15-day field trip along the 38th parallel. They observed South Korean troops drawn up in 'defensive positions.' On June 14, John Foster Dulles left Washington for Korea. On June 18, Dulles arrived in Korea. On June 21, Dulles arrived in Tokyo for conferences with MacArthur, Louis Johnson, and General Bradley. On June 22, Dulles predicted 'positive action by the U.S. to preserve peace in the Far East.' The same night, regimental headquarters at Ongjin received a report indicating 'increased military activity about 4 kilometers north of the parallel.' On June 25, North Korea attacked with 70,000 men and 70 tanks. Two days later, the U.N. Commission cabled the Security Council that the South Koreans 'were taken completely by surprise, as they had no reason to believe from intelligence sources that invasion was imminent.'

Embarrassing Questions

From the foregoing, Stone raises some embarrassing questions. Why did Seoul, which had been loudly clamoring for help against a coming attack, suddenly become silent on the question after May 11? Why did MacArthur pretend the invasion was a surprise? Why did not MacArthur, Chiang, or Rhee alert the world to the danger? Why were the top Republican foreign policy maker, the Secretary of Defense, and the head of our joint Chiefs of Staff all in Tokyo a few days before the invasion? Syngman Rhee's regime was folding up as a result of elections forced by the American State Department. Would Communists gain control of South Korea by peaceful means? Would the U.S. leave Mr. Rhee and his brutal police to face the wrath of their own people?

To these questions, the author provides some extremely interesting speculation. The explanation can be summed up as a deliberate attempt to force a change in America's policy of 'hands off' toward

Formosa and other danger spots in Asia. By committing U.S. military aid in Korea, it was felt, our whole Far Eastern strategy could be altered, Chiang would be welcomed as an ally, and World War III brought within range. Stone refers to the supporters of this concept as the 'preventive war crowd.'

Pressure for a Japanese peace treaty was on. Stone explains that, assuming no change in American strategy for Asia, a Japanese treaty would have left the U.S. without bases on Japan, and made Red China's occupation of Formosa a certainty. In that event, the U.S. could hardly avoid recognition of the Peking government.

In chapter 6 under the heading 'Time Was Short,' the author ties in the Korean War with the necessity for immediate action if Japan were to be held as an American base. Truman and Acheson favored an early peace settlement. The pro-American faction in Japan's government was rapidly dwindling. Attacks on American GI's were becoming frequent. Stone also suggests that the real reason for top-level military discussions prior to the outbreak of war was to determine whether a civil war in Korea might lead to World War III. By keeping silent, Tokyo headquarters proved it was anxious *not to frighten off the North Koreans.*

Situation Summarized

Stone summarizes the situation as it existed on the eve of the outbreak of fighting. 'It is as if the scene had been set with masterly care.' Here are some of the 'stage props' in the setting:

1. No outward sign of disagreement between MacArthur's faction and the Truman administration on the U.S. Government's decision that Korea was outside America's defense perimeter.

2. America pretended to regard the attack as inevitable and of little concern.

3. U.S. Military conferences failed to alert the communists or the public that attack was expected immediately.

4. After May 11, *as if by agreement,* the South Korean government became silent on the danger.

5. South Korea's army was drawn up in defensive positions. U.N. field observers were allowed to observe this, and report.

Thus, with the scene carefully prepared, the South was 'staked out' as tempting bait. After three probing attacks across the parallel by the South Koreans, the North took the bait and launched their invasion ahead of schedule, as expected.

Stone cites some evidence that the attack came at a convenient time for the anti-communists. Rhee had just lost control of his legislature — war gave him sudden respectability. Within two days Chiang gained American protection from Chinese attack. The question of a Japanese treaty was shelved. (To which we might add a fourth and more significant reason — American business needed a war to stave off economic depression signs at home.)

The invasion by the North Koreans seems to have occurred, on the other hand, at an inconvenient moment so far as China and Russia were concerned. As a result of the war, China could not occupy Formosa without conflict with the U.S.A. America would retain bomber bases on Japan indefinitely, hope for collapse of the Rhee government under the impact of free elections vanished, American industrial power was mobilized, and the campaign to rearm Germans and Japanese was given impetus. Stone wonders whether Russia would pay so high a price for a minor prize like South Korea. It would not appear that either Russia or China wanted the Korean War.

Errors in Statements

The author calls attention to several 'errors' in MacArthur's statements in regard to the outbreak of the war. For example, the General blandly maintained in his July 25 report: 'The character and disposition of the Republic of Korea army indicated that it did not expect this sudden attack.' But eighteen months later his intelligence chief, General Willoughby, said 'The entire South Korean army had been alerted for weeks.'

Truman's first reaction was to pledge sympathy and support through the Security Council. Something made him change his mind on Monday night, June 26. On the following day, the U.S. government ordered 'air and sea forces to give cover and support' to the South Koreans, and imposed the U.S. 7th Fleet to protect Formosa. Fear of his political opposition forced Truman's hand. MacArthur and his followers had stampeded a reluctant administration, which in turn stampeded the Security Council into voting military sanctions *which were already in effect.* The U.N. found itself with a commander whom it could not command.

Closely analyzed, the actions and statements of the Supreme Commander are revealing. At a time when the Russians had broken their U.N. boycott and humbly returned in the interests of mediation for peace, MacArthur took the opportunity to stall peace talk by a dramatic flight to Formosa, where he publicly announced 'effective coordination' between American and Nationalist Chinese forces 'the better to meet any attack.' This clearly implied an alliance with Chiang and scuttled any chance to end the fighting at that time.

International Politics

The first North Korean offensive pushed the U.N. forces down into the Pusan pocket. At this point the communist war machine ran so short of munitions and supplies, that they were unable to make a final push which would have driven the U.N. forces into the sea. Stone points out the fact that had Russia or China desired, they could easily have supplied enough additional aid to push the enemy off the peninsula entirely. No help was forthcoming. The Pusan beachhead held, and the Inchon landing soon had American forces back in Seoul. The author

cites this as reluctance on the part of China and Russia to endanger a possible mediated peace, particularly since the bitterness of defeat, especially in an election year, would have made it politically impossible for Truman to negotiate peace.

Fearful of peace again in September 1950, the U.S. began propaganda campaigns for universal military training, and for rearming the Germans and Japanese. To sell these campaigns, a stepped-up Russian Menace scare was being promoted. Already accused of being 'communistic,' Truman's Fair Deal did not dare negotiate with the Russians or Chinese.

To accomplish his political objectives, MacArthur lavishly sacrificed the lives of his troops and of South Korean civilians. Following the Inchon landings, orders were to take Seoul as soon as possible. Marine commanders, whose forces suffered 6000 casualties from Inchon to Seoul, stated that the city could have been surrounded and left to 'die on the vine' with little loss of life or damage. One army commander expressed the opinion that the destruction of Seoul was 'international politics.'

Lush Markets

Stone points out that MacArthur was anxious to install Rhee in Seoul and make his 'unconditional surrender' demand swiftly enough to forestall a decision on peace terms by the U.N. At the beginning of the war, Rhee's police had executed 1200 of their own people as 'suspected communists' and 'bad security risks.' The North Korean army had no illusions about the meaning of unconditional surrender to Syngman Rhee. Thus they had no choice but to continue fighting.

At the parallel once more, the U.S. revealed its fear of peace and free elections in Korea. The communists proposed to retire to the north and U.N. forces withdraw to the Pusan area while free elections were held to determine a government for all Korea. Naturally, Rhee and Warren Austin opposed this plan, since it was suspected that the Communists could poll a majority vote all over Korea.

Meanwhile, conservative Japanese were voicing approval of American action in crossing the parallel, with visions of lush markets when 'reconstruction,' backed of course by American capital, was begun. The greater the destruction, the bigger the market. This must have been, Stone remarks, the last bitter mouthful for the Koreans.

America's allies, as well as the communists, called for free elections throughout the country, while the U.S. and Rhee wanted elections in the North only, supervised by the Rhee regime. While argument proceeded, MacArthur recaptured Seoul and proclaimed the 'Unconditional Surrender' terms. Another chance for peace was lost. MacArthur's technique of acting first and securing authority later was vividly demonstrated in the following sequence of events:

Oct. 1: South Koreans crossed the parallel.

Oct. 7: U.N. resolution passed permitting crossing of the parallel.

Oct. 8: Two American fighter planes strafed a Soviet airport 60 miles north of the border.

Oct. 9: The State Department 'refused to acknowledge' the Soviet charge. MacArthur's spokesman said he 'knew nothing' of the charge.

Oct. 10: Truman decided to fly to Wake Island to confer with MacArthur.

Oct. 15: Wake Island Conference held.

The author suspects that some ultimatum regarding attacks on Soviet territory was delivered, and that Truman's dash to the Pacific was intended to set MacArthur straight about further raids of that kind.

The North Korean army was in a rout. U.N. forces advanced to within 60 miles of the Yalu. Our allies were calling for a 'buffer zone' between Chinese troops which had been moving in to protect dams and power plants near the Yalu, and the advancing U.N. forces. The U.S. Marines finally engaged Chinese troops defending the Changjin reservoir. By November, the United States began considering 'accusing Communist China of intervention.' On November 6, MacArthur issued his special communique accusing China of 'one of the most offensive acts of international lawlessness of historic record,' by intervening from their 'privileged sanctuary' across the border. The General's evidence of Chinese 'aggressive intervention' consisted of four incidents involving anti-aircraft fire *from Manchuria* on approaching U.S. bombers, one attack *at the Yalu* on American F51's by communist planes (no damage), and seven 'incidents' involving questioning of Chinese prisoners captured *defending the Changjin-Pujon power complex.*

Strange Coincidences

Throughout Stone's running account of the war's progress, MacArthur's desire to provoke an extension of the fighting to China and Russia stands out.

On Nov. 7, the defending Chinese broke contact and began to withdraw. U.N. patrols failed to find the enemy. The Security Council was due to meet on the following day. A truce might have resulted. Something had to be done quickly. By coincidence, on Nov. 7, the Air Force suddenly lifted its ban on bombings within 3 miles of the Yalu River. The same day, the Korean city of Sinuiju, on the Yalu, was attacked by 79 Superforts and 300 fighters; 630 tons of demolition and incendiary bombs were dropped. Bridges were destroyed. Ninety per cent of the city was wiped out. Tokyo Headquarters had ravaged a Korean city at a time when the Chinese had withdrawn and a truce was in prospect.

The Chinese abandoned four large hydroelectric projects to the Marines, while our air force continued mass bombings of cities and bridges all along the Yalu River. Stone points out the embarrassing truth behind the scare headlines: while the western powers were introducing a resolution in the U.N.

asking the Chinese to withdraw, the Chinese *actually were withdrawing.*

The author next calls attention to another of the strange coincidences which keep appearing in the story of the war. A delegation from Peking was due to arrive at the U.N. to present their case on Formosa, on November 15. By coincidence MacArthur's big 'final offensive' had been scheduled to begin on the same day. When the arrival of the Peking delegation was accidentally delayed until the 24th, however, the Supreme Commander's offensive was postponed until — November 24. Stone points out that as things stood, aggression had been repelled, and the North Koreans had been punished. By his November 24th offensive against withdrawing Chinese, MacArthur was making another bid to provoke World War III. He claimed suggestions of a buffer zone between U.N. and Chinese forces were jeopardizing his victories. On the eve of the offensive, peace rumors were everywhere. The Chinese had just released 100 prisoners, offering to release 1000 more, stating they did not want war with the United States. The British were quoted as 'fearing some irresponsible step might make a peace settlement impossible.' Something had to be done. MacArthur did it.

Peculiar Events

Two days after the publicized 'final offensive' began, Tokyo's communique stated petulantly: 'The enemy refused to make an appearance.' In the weeks which followed, some peculiar events occurred as shown by Stone's analysis of dispatches from the front. On the west, the Eighth Army evacuated Inchon, then Seoul, and seemed in a great hurry to withdraw. The Tenth Corps was evacuated from Hungnam on the east coast, with little opposition. Tokyo continued to supply a cascade of headlines indicating that Chinese 'hordes' had MacArthur in headlong retreat. Statements by field commanders, however, showed scarcely any contact with the enemy in three weeks of retreat. One reporter wanted to know, how many 'hordes' are there in a platoon? The Chinese followed cautiously. The picture of headlong retreat was being created by MacArthur's headquarters for political reasons. In December, the General finally admitted that the 'planned withdrawal' of the previous three weeks had not been based on enemy pressure, but on the 'Chinese potential.' Those dratted Chinese kept disappearing. How could MacArthur brand China as aggressor, the author asks, when her forces failed to aggress?

Stone gives a detailed running account of the U.N. 'rout' following the Nov. 24th offensive which creates an illuminating picture of MacArthur's political maneuverings. Under cover of false claims of huge 'hordes' of onrushing Chinese, the Supreme Commander continued to rush his troops south, while all reliable evidence showed *no Chinese below the 38th parallel.* One commander made the mistake of holding his position, waiting for the Chinese to show up. He was Major General R. B. McClure, U.S. 2nd Division commander. The 2nd finally contacted and repulsed eight North Korean attacks, inflicting heavy losses. On January 15, after having saved the Eighth Army from being outflanked, General McClure was relieved of his command, and the retreat continued.

By this time the fishy odor of the U.N. retreat was too much for the British. MacArthur's strategy finally became clear. Tokyo Headquarters had been seriously discussing total evacuation of Korea, with broad hints that this would mean *extension of U.S. bombings into Manchuria. MacArthur was trying by military maneuvers to accomplish the result he had been unable to achieve politically.* The British forced President Truman into a showdown. Collins and Vandenberg flew to Korea. General O'Donnell, commander of the Far East air force and advocate of Manchurian bombing, was relieved of his post. Under orders delivered by General Collins, the U.N. turned to face the foe, and confronted a mystery. 'The hordes had vanished like the figments of a nightmare,' says the author.

From this point, the same maneuvering up and down the peninsula, with major enemy offensives being daily predicted but never quite materializing, the same 'fairy tales' from Tokyo regarding astronomical numbers of enemy killed, etc., fit into a now familiar and odious pattern. Each time a lull threatened and peace seemed possible, MacArthur would take counter measures which kept the outside world from realizing the situation. The 'liberators' of Korea ranged far and wide, destroying villages with napalm, rockets, and high explosives.

One Air Force summary told the story of a 'saturation raid' on an area where 'about fifty enemy troops' had been sighted. Twenty-four F51 Mustangs poured 5000 gallons of napalm over the area. Smoke rose to 4000 feet. One group leader said of the raid: 'You can kiss that group of villages goodbye.' Captain Hugh Boniford of Alabama added: 'That place can really be called devastated now.' Stone commented, 'Captain Boniford's remark applies to all Korea.'

Technocracy's Position

Technocracy does not necessarily endorse I. F. Stone's views, political or otherwise. However, the facts he presents are fully documented, and facts speak for themselves. In summarizing the historical evidence of the Korean war, Stone makes several points painfully clear. The picture of the war as presented to the American people by press and radio has apparently been deliberately falsified. The determined political maneuvering by MacArthur and his proponents to provoke China and Russia into a showdown World War III is unmistakable, South Korea was intentionally set up as 'bait' to lure the North into attack, with the intention of forcing the

American policy of 'containment' of communism to be extended into the Pacific. Time after time, when the enemy seemed to want to call off the fighting, some incident, headline, or political move by the U.N. Commander made peace talk impossible. The peninsula of Korea has been virtually burned to the ground. U.N. airmen, in sheer frustration over lack of targets, have bombed, strafed, or burned whole villages of non-combatants. Our own American boys are being told that they are fighting for freedom everywhere.

Stone refuses to analyze the picture in its long-range context. Technocracy commends him for an excellent reporting job. The Korean war has been analyzed by Technocracy from its beginning as fulfilling two major purposes:

1. As an excuse for maintaining war production and profits at home, and for foreign 'dumping' of American surplus technological output.

2. As an implementation and extension of United States participation in a world-wide crusade against social change, with the twin objectives of preserving the status quo for corporate enterprise, and the erection of Cordon Sanitaire No. 2.

General Van Fleet summed up the situation in speaking to a visiting Filipino delegation in January, 1952: 'Korea has been a blessing. There had to be a Korea either here or some place in the world.'

—Roy Huff, Section 1,11834

The Mechanics of Morality

Many people become interested in social progress and reform as part of a quest for justice — social justice in particular.

However, justice is an illusive form and therefore also an elusive one. Thinking about social issues is all too frequently found associated with concepts that are not necessarily related to the needs of man. Hence the pathetic confusion among liberals and so-called left-wingers.

No blame or stigma need be assigned to anyone who has been victimized by moralistic complexes. On every court-house in the land one finds illustrated the balance scales to depict the measurement of an immeasurable nothing. In every church, school and home, constantly ring the words and flash the pictures that weave in the minds of men, women and children, fantasies of ethical superstructures — worlds and worlds of unrealities.

On the radio, around the clock, the melodies and dramas of mystical inanities blast away at us and at our children. On television, what do we see? More and more flights into never-never lands — hours and hours of it.

One scientist does more significant work than any president or princess could ever hope to accomplish. But, in the newspapers, the findings of science, if they are reported at all, are given an inch or two on an inside page. The rest of the paper, including the front page, is given over to the antics of politicians, military men, the clergy, and, don't forget, the Junior League. Of course, there are also the sports, the comics, the classified ads and the big promotional pages. But very, very little about the facts of life.

From the moment of birth until he gasps his last breath of oxygen, the receptor mechanisms of man are being bombarded by illusions and delusions. Most of them are handed down to him from the mental immaturity of his predecessors. The neuro-somatic patterns that we find ourselves saddled with center around the garrulous voids of purpose, morality, ownership and legal rights. None of these is in any way measurable, verifiable or capable of objective definition. From a scientific standpoint, they are invalid and non-functioning.

The social technology of the future will be a systematic application of mensuration. Function, metered and mathematical, will replace philosophical constructs such as purpose and initiative.

The dimensional needs of human beings, relative to health and survival, will do the job that is now being fumbled by varying and contradictory sets of ethics. In the place of ownership, goods and services (including 'real estate') will be available to all who can show constructive use of them. This will occur without the many ifs, ands, and buts of the present system with which we are all so familiar. The proven necessities of life will constitute a man's bill of rights — not the high sounding phrases of eloquent writers and speakers.

The concept of justice must go. Physical sequences will function to give us what the most idealistic social justice hunters are not even capable of dreaming about: more freedom from toil, greater opportunity, better health, longer life, and an abundance of comfortable things, most of which have not yet been invented. The wonderful things we now enjoy are rapidly becoming obsolete.

More freedom from toil will be useless to you if you cannot get rid of your old moral conditioning. The guilty feeling some persons get when they are having fun will haunt them when there is no work to do. The compulsion to work in the presence of a

lack of work will spell distress to many a guilt-ridden human animal.

Guilt is not limited to the problem of leisure. It can apply to anything that a person does or does not do which is contrary to what he thinks or feels is as he 'should' behave. (Science, incidentally, does not recognize 'shoulds' and 'oughts' — they are not measurable). Probably the most frequent area of guilt with most North Americans is involved with sex, around which numerous tabus, superstitions, and social mores have been concocted. And, of course, there are many other areas.

The offices of psychiatrists and psychologists all over the land are filled with the problems of guilt that prey upon the minds and emotions of innocent people who do not realize that they are innocent. This innocent guilt is even more markedly in evidence in our mental wards and also in the penal institutions. On the rest of the guilt spectrum, in varying degrees and stages, are the remaining populace, the 'normal' people.

Human Behavior Measurable

Contrary to what we have been led to believe from the pulpit, guilt-consciousness is no deterrent to anti-social behavior. It has been actually shown by statistics that much so-called crime and insanity are engendered by extremeness in the sense of guilt.

Guilty feelings result from concepts tied to a very deep-seated philosophy of human conduct, that of *freewill* or *choice*. Over and over, we are told, directly and by inference, that we are free agents. (This is part and parcel of the never-never worlds referred to earlier in this article). We are presumed to make our own decisions. It is said that we are responsible for our acts, our thoughts and feelings. This concept of self-determination is so thoroughly grooved into our neurons that we find it very, very difficult to give it up. It is supposed to give man his dignity (whatever that might be). Possessed of initiative, man can console himself to the effect that he is the master of his destiny and can change the course of events to build for himself more stately mansions. Etc., etc., ad nauseum.

In all of this grandiosity there lurks a snare. Armed with the faculty of choice, any act of a person which, by the standards of another human or group, or by his own standards, is 'wrong,' subjects him to all sorts of problems, from simple embarrassment to disgrace to incarceration to annihilation. Further, since no act stands alone, it being associated with preceding and succeeding acts as well as thoughts and feelings on numerous occasions, the problem of responsibility and the fixation of guilt becomes positively complicated and highly formidable.

Why take consolation in the free-agent concept? Suppose it were true. This would mean that any type of conduct in any organism might occur at any time under any circumstances without any capacity or facility on the part of anyone to predict or control. Your best friend might suddenly decide to murder you without provocation. His own free-choice mechanism would determine his behavior toward you, and not your influence and other past conditions and determinations. Your Technocratic publications might arrive some day spouting Price System philosophy. The initiative of its writers, editors and publishers would enable them to act in defiance of their own orientation. Your children might suddenly stop speaking English and begin conversing in Russian. All that would have to happen is an exercise of free-will.

If you must take consolation, take it in the fact that *all* human conduct, including thinking, feeling, and what passes for these functions — all human behavior — is *physical*. All human sequences are measurable factors — all of them! This means that they can be investigated by laboratory method. It means that they can be predicted and controlled.

In fact, you are in a minor way measuring, predicting and controlling human sequences every day. Just analyze this fact in regard to your own thoughts and acts and those of the other persons involved the next time you pick up the telephone or lay a dollar bill down on the grocery counter. You know what behavior to expect from yourself and others — part of the time. And your knowledge, so far as it is able to go, is based on material information about physical facts.

The problem that moral systems attempt to deal with relates to the behavior of people, individually and collectively. The need for more accurate predictability and control fosters the inventions of codes of conduct which then become morality in a given society. The inadequacies of morality as an approach to behavioral control are in evidence all about us. This is the case because moral systems assume certain factors that do not exist, chief among which is the free-will or choice idea.

Determined by Needs

As science moves in more and more closely to accurately survey the needs of man and to accurately set up functions relative to those needs, predictability and control of human behavior will become less and less enigmatical. The behavior patterns of people are determined by their needs. Herein is the clue to behavioral controls and prediction. Moral exhortations have not fully taken into account the fact of human need. Governmental operations and business expediencies have largely ignored human need.

The facts being uncovered by technological advances are rapidly piling up. Science is an irreversible process. And the rate of discovery of new information is accelerating. This information includes more and more realities about human needs. The data cannot be disregarded much longer. In other words, there are going to be some changes made in man's social patterns.

—Erwin Theobold, 11834-1

When There Is No Alternative

Man's technological progression is forcing human society to eliminate old alternatives and to create new courses that do not permit alternatives. In a technological society there can be no alternatives of governance, only one — functional control.

In America, the idea of freedom has degenerated to the concept of a choice between alternatives. We tend to think in terms of two alternatives of more or less equal rank; and we like to feel that we have a chance to choose between them. Shall there be war or peace? Shall there be inflation or deflation? Shall we elect a Republican Party administration or a Democratic Party administration? And shall the choice be Adlai versus Estes or Dickie versus Bill? So long as you have alternatives to choose between, you can vote your opinion. Democracy, it may be said, is at work.

But, what if you do not have alternatives? What if there is only one road ahead, and you cannot turn back or even stand still? You do not, then, have a choice; you cannot exercise an opinion; and democracy becomes as useless as mammary nipples on a male bovine.

Man's technological progression is forcing human society to eliminate many of the old alternatives and to create new courses that do not permit alternatives. This applies particularly to the major aspects of social affairs. For example, the day is at hand when mankind shall no longer enjoy the choice between diplomacy and war as a means of settling international disputes. When it becomes a question of negotiation or annihilation, there is no choice, for these are not alternatives. Nothing that contradicts man's basic nature can be considered an alternative. Man does not choose between death and survival. One may choose between two kinds of survival or, on occasion, between two types of death. These may be considered as alternatives, provided they are of somewhat equal rank. (It is only in extreme cases that death and survival can be treated as alternatives at all; such as, for example, survival under torment in a fascist concentration camp and quick death by suicide.)

The people of a great nation cannot be asked to choose between the survival of their civilization and population on the one hand and annihilation through atomic warfare on the other. This cannot be asked, even though the bait is international loot of the first magnitude or the ecclesiastical capture of a half billion human souls and tithes. If a decision rests on such opposite consequences as survival or annihilation, then there is only one course of action to follow — the abandonment of atomic warfare as a means of international persuasion. A decision may rest, however, somewhere between two or more modes of peace; if, indeed, there can be a choice between 'forms' of peace in a technological age.

The jesuitical polemics may argue that annihilation by atomic devices is no worse than 'political slavery'; but that is only a play on words — it has not been demonstrated in the field. Cardinal Spellman and others have asked the Western World to welcome atomic annihilation in preference to political socialism; but such gestures merely demonstrate how far from the field of reality verbal argumentation may wander. Or the polemics may argue, 'What if the other side does not renounce atomic warfare; shall we leave ourselves wide open to attack without a resort to retaliation in kind?' That argument is on a par with advice given to a mountain climber standing on the edge of a cliff to the effect that he should jump off the cliff lest he be pushed off by a possible snowslide.

'Agonizing Reappraisal'

No, dear folks, we no longer have as a practical course the choice of preparing for atomic warfare or even of threatening 'massive retaliation.' Rather, we must make an 'agonizing reappraisal' of all national policy that tends to lead us in such a direction. Analyzing the situation further, that means that we, as a nation, must seriously consider abandoning the concept of military might as a way of settling international disputes. Recourse to little wars or 'limited wars' is no more valid than undertaking a 'limited pregnancy.' Therefore, for the future, there can be no alternative to 'peaceful coexistence.' The only question that might possibly be entertained is, 'What kind of peace?' But we are not sure that even that question can be phrased in the form of equivalents or alternatives, as we shall see later.

In the meantime, let us return to the argument, 'What about the other side; what if it does not renounce atomic warfare; what if it refuses to renounce all kinds of warfare?' Well, are we going to let the behavior of the other side determine our course of action and, thereby, become in effect our master? If the consequences of atomic war are to be annihilation, we simply cannot consider taking that course, nor of letting anyone provoke us into taking that course. We can consider only such courses as take

us away from the probability of annihilation. And making threatening advances to the 'brink of war' is not one of those courses.

The only time one can, with any validity, threaten war is when one has an excellent chance of surviving and resuming one's former way of life or improving on it. If a nation stands a good chance of capturing worthwhile loot, of eliminating an irritation, or achieving a more strategic position, we may concede that it has a valid argument for initiating war. But no nation willfully chooses warfare if it foresees that the consequences shall be destructive and humiliating defeat for itself, even a defeat that is far short of annihilation. When such a defeat does come, it ensues as a consequence of miscalculation, not as a planned result.

You may ask, 'But does not potential retaliation act as a deterrent to war?' Under certain circumstances, yes; under others, no! You may be deterred from war if the other side has such an overwhelming superiority of military might that any attempt at war would mean complete and utter defeat of your side. Or, if your side has become so subdued by a long period of subservience that it has no will to fight. But, if your side is at all near equal to the other side, then the other side's preparedness for war will only make you more determined to become prepared, with the idea of winning the war or, at least, waging a successful defense. Thus, preparation for war by the United States, instead of cowing the Russians and Chinese, only makes them prepare for war also. If your side is weaker than the other side, but not subdued in spirit, you will try to counter the other side's superior might by developing a more effective strategy and resorting to propitious timing. Such could be considered the position of Japan at the brink of World War II.

Either the United States or Russia might be able to forestall wars among minor nations near at hand with threats of 'massive retaliation'; but it is doubtful that any other nation is in a position to 'deter war' by this means. The phenomenon of a large populous nation, with people slavishly docile under the tyranny of a smaller nation, is disappearing from the earth. India and Burma are no longer servilely obedient to the British; the Indonesians no longer accept Dutch mastery; China no longer bows to foreign gunboats on her rivers; and Black Africa is 'evolving' toward independence and self-assertion. As the North African Arabs and Berbers are rebelling against the inequities imposed on them by the French, so it is only a matter of time before the South African blacks will overwhelm the less numerous whites. It is difficult to point to any place on the earth where a large population is (or for long shall be) subdued by a smaller foreign population. Hence, the threat of force as a means of deterring war is limited to those situations wherein the threatening party is a major nation and the deterred party is a minor nation.

War was an alternative to diplomacy as a means of settling international disputes at a time when wars could be waged by limited means and would end in victory, defeat, or stalemate. But, when warfare can mean only mutual annihilation of the combatant nations, and possibly of neutrals besides, it cannot be contemplated as a technique of persuasion. Any advocacy of war, then, becomes in effect high treason; and the society shall be compelled to deal with an advocate of war as it would deal with a traitor. Militarism and pacifism become obsolete terms, since they no longer constitute alternatives.

Compels Negotiated Settlement

But, acknowledging that war is not an acceptable course, would it be possible for our side to accept renunciation of war while the other side is still armed? We are, at present, in the position of two men with pistols pointed at each other's hearts. They hesitate to shoot, for that would mean death to both of them. Such a 'stalemate' is not a truce and it certainly is not peace. It is only a situation which *compels* a negotiated settlement. So it is with the United States and Russia. Further preparation for war is ridiculous in view of the probable consequences; and, ipso facto, further threats of force are likewise ridiculous. In spite of what it may do to the American Price System economy, we must stop thinking in terms of war and peace and start thinking only in terms of coexistence, modus vivendi, or whatever you want to call it.

We might here consider another deterrent to war which has never presented itself before. Weapons of mass destruction are approaching the stage where it would be possible to utterly destroy and render uninhabitable for a long time the territory of the enemy; and this could be done in a short while and from a great distance. Thus, the primary incentives for war; namely, economic stimulus to business and loot, are no longer valid. If, in a few hours, you should eliminate the opportunity for a war boom prosperity, as well as a whole population of future customers, there isn't much sense in going to war, is there? This would be so, even if there were no threat of retaliation in kind.

It is obvious that neither the United States nor Russia can hope to deter the other by threats of force, whether that threat is leveled by either directly at the other or at one of its committed allies. The United States does not appear able, either, to deter China very much by threats and acts of war. Thus, between equals or near equals, belligerency is met with belligerency. Other examples are Egypt versus Israel, North Africa versus France. In such cases, armed preparation is less a deterrent to war than it is a temptation to initiate 'preventive war'; that is, the strategy of attacking the other side by surprise, presumably when it least expects attack and is unprepared for it. This is the strategy which a number of trigger-happy 'experts' in America are advocating that we adopt against Russia.

Are there alternatives with respect to the kinds of peaceful coexistence that are possible? It so happens that technological factors in our social

trends are eliminating alternatives in peace as well as in war. But, before discussing that, let us continue with the problem of war.

The policy of the United States government during both administrations since the Second World War has centered on the proposition that war against Russia is inevitable; and there appears to be every intention on the part of our political administrators to make sure that it is inevitable. This policy goes back to our becoming involved in the ideological conflict between the Vatican and the Kremlin, in which we became afflicted with the Vatican via a combination of sub rosa devices, including the Vatican's using the threat of 15 million Catholic votes in the United States as a form of blackmail. One of the strategic objectives of the Vatican is the annihilation of the Soviet Union. So the United States, as long as it allies itself with the Vatican, is stuck with that objective. Our officials are not free to discuss a reconciliation of differences between the two greatest powers on earth. Hence, any move by the Russians toward a discussion of the problems of peaceful coexistence has to be given the brush-off by our political administrators; and counter measures must be quickly initiated. This practice was observed by President Harry S. Truman and Secretary of State Dean Acheson; and, now, it is observed even more promptly by President Dwight D. Eisenhower and Secretary of State John Foster Dulles.

The Pattern of Hypocrisy

When one considers the proposition that the United States is committed to a military show-down with the Soviet Union and is bent upon the destruction of the social, economic, and political structure of Russia, then all the details of our recent actions seem to fall into place. On that premise, the Cold War appears to have a purpose. Likewise, the rejection by the State Department (over the signature of the president) of all overtures to peace by the leaders of the Soviet Union, including the recent snide rejection of the invitation by Premier Bulganin to sign a treaty of mutual friendship and cooperation for a minimum period of twenty years. Likewise, the repeated insistence by President Eisenhower that the countries of East Europe be returned to the West, including parts of the sovereign domain of the U.S.S.R. Likewise, the encirclement of Russia with military bases by the United States and the seduction of peripheral nations into making hostile gestures toward Russia; for example, Turkey, Pakistan, West Germany, France, and Britain. It would also account for our continued launching of dangerous balloons into the atmosphere of the 'other side.'

In its relations with Russia, United States officialdom is following the same pattern of duplicity, double-talk, and hypocrisy that it usually displays in its relations with other nations and with its own people at home. In fact, it coincidentally follows the same pattern that the Vatican constantly practices; namely, speaking for one thing and acting for the opposite — for example, speaking for peace and acting for war. Thus, since the strategic objective is war, with the probable ultimate goal of colonizing the whole world, our spokesmen must do double-time with their talk of 'peace' and 'freedom,' in an effort to make their words outshine their deeds. They appear to be obsessed with the advertising myth that, if you repeat a falsehood often enough and loud enough, it becomes accepted as a fact.

Fortunately for the American public relations men, they are dealing with the portion of the world's population which is most easily taken in by the advertising technique — the public of the U.S.A. It is rather difficult for most literate people to reconcile two opposites into a harmonious union; but, for the American public, it comes easy. We can be told that the program of stock-piling atomic and hydrogen bombs is for peace; and we believe it. Likewise, we believe that the United States is promoting freedom around the world at the same time that it is filching the vital resources of other countries and hamstringing them with military programs. We believe that we are the most humanitarian people on earth; yet, we know that there is no device of destruction and torture too horrible or cruel for us to use on other people when an occasion presents itself, whether it be poison gas, jets of flame, jellied gasoline, virulent germs, or atomic bombs.

In our own economy, we believe that debt is wealth; that machines make jobs; that automation means more work for more people at higher pay; that more efficient and lower cost mass production means lower prices for the consumers. It is very easy for us to believe that the more petroleum we take from the ground, the more we have left. We are even capable of believing that politicians are honorable men. So, it would be no great trick at all for the politicians to sell us the idea that going to war with thermonuclear bombs is a safe and sane way of preserving the peace. Yeah, verily, let us die that we may live!

Sane Analysis Needed

Fortunately for the world, there are a few people —albeit, very few—who can see the issues clearly; who will not accept opposites done up in one package; who are not numbed into belief by the constant repetition of a lie. If the world is saved from thermonuclear and radioactive destruction, it will be because these few people are able to expose the hypocrisy that enshrouds the policies of nations, and of the men who lead nations toward disaster — yes, even to the brink of atomic war. And don't fall for the pious pitch, either; for piety is no guarantee of sanity or restraint. The radio and daily papers carried an account recently of a man in New Jersey who took a 12-gauge shotgun and blasted six of his family to death, then shot himself. There was no apparent reason for his behavior, but it was reiterated that he was 'devoutly religious.' Remember, Messrs.

Dulles and Eisenhower are also 'devoutly religious,' not to mention Messrs. Nixon and McCarthy.

In spite of the double-talk, in spite of the declared objective of the Rome-Washington axis of destroying the Soviet Union, and in spite of all the preparation for war, the choice of war as an alternative for the future fades in the light of any sane analysis. And, it happens, there are a fair number of people, even in America, who are making a sane or semi-sane analysis of the situation. They are far more effective than you might suppose, considering their small number and the overwhelming clamor for war on the part of our national leaders and publicity men. As we hinted earlier, our national leaders are addicted to the psychology of salesmanship; and there is nothing that will dishearten a salesman quicker than a few skeptical contacts or an impartial analysis of his 'product.' A half dozen critical comments in the mail have been known to cause a major advertising campaign to be withdrawn or revised. That shows how touchy business hucksters are about the acceptance of their piffle. The political hucksters are no different. They seek to evangelize the masses and silence the opposition and if successful they are happy; but they cannot stand having their duplicity exposed. See, for example, how little it took to scare off the Crusade in Costa Rica last year. A single embarrassing question is often enough to send a piece of proposed legislation 'back to committee' to be kept under wraps for a while.

Only One Alternative

What does it profit us that we may have ten times as many atomic devices as the Russians, if the Russians have enough to destroy everything that is destroyable on this Continent and we have no feasible defense against them? Under the circumstances, any rejection of a proffered treaty of 'friendship and cooperation' is highly dangerous and suggests a type of maniacal insanity — a mania for pursuing an objective even after further pursuit becomes suicidal. A much more realistic procedure would have been to proffer the treaty of friendship and cooperation ourselves. When the rejection of such an offered treaty is accompanied by a virtual demand for unconditional surrender, we are, indeed, headed on a maniacal course. Our main hope for survival, then, would appear to rest on the other side's retaining a more sane and realistic composure in the face of this highly dangerous situation. This is particularly so, since the bulk of American and British editorial opinion espouses the suicidal course.

Let it be understood that we, as Technocrats, are no philosophical pacifists; rather, we are technological realists. If war were the simplest and most efficient alternative for resolving an urgent problem, we might even be in favor of it. But contemplation of wars of mutual annihilation can have no place in the thinking of realists. And it can be put down as prima facie evidence that one who contemplates a major war under present circumstances is, psychologically, operating in a world of fantasy.

Assuming, now, that the civilized people of the world will choose survival over suicide, what possible courses lie ahead for them? Alas, for the advocates of alternative courses, we can offer little encouragement. For, within a very short while, major social alternatives will face their denouement; and there will be only one road ahead.

The population problem, for one, is forcing a course of action upon the people of the world. The population must soon be controlled and held within bounds compatible with the capacity of the world to provide a decent standard of living for all. There can be no toleration of such flippant evasions as, 'Oh, the scientists will find ways of providing more food for more people, so the world's population can be permitted to increase to ten billion or more.' Food supply is only one aspect of the problem, and not the most decisive one. It will no longer be possible to hold the great majority of the world's people at a sub-minimum standard of nourishment, health, and opportunity, while a few 'live like kings.' Whatever one's philosophical and moralistic approach to the problem may be, there still remains only one course to follow into the future — controlled breeding of human beings. We may yak-yak about it all we please, but in the end we must acknowledge that there are no alternatives to the population problem.

The same is true of the problem of social economy. The economy must be contained within the long-term availability of energy, materials, and environment. At least one of these factors (and probably all three) is going to impose limitations that compel us to adopt a unique solution — technological control. The wasteful and haphazard practices of an enterprise economy is, at most, a temporary adventure in this age of power; and it has been permissible as an alternative only so long as it could continue to expand indefinitely in a world replete with essential resources. This is true whether the enterprise be private, corporate, or collective. Under primitive animal-like circumstances, man may have continued to operate a survival economy, by either individual or group initiative, for many millions of years, but not so in a technological age. For the future, the economy of an operating Area must be tightly controlled in its major aspects, not for the purpose of restricting consumption, but rather to permit the most consumption for the population out of that which is available. Already the depletion of metals, the dissipation of fossil fuels, the misuse of fresh water, and the overcrowding of urban centers is forcing us to the brink of a disaster that could rival that of atomic warfare. The sooner we sell short the ballyhoo claims of the Madison Avenue hucksters, the more likely we shall avoid the economic cul-de-sac into which we are being hurtled at the present time.

To be sure, the reactionary emotionalists will put on an act of tears and sobs over the passing of the old-fashioned alternatives; the same as they wept over the passing of home-churned butter, the twelve-hour workday, and horse-droppings on main street. The professionals will weep hot and cold tears, at a price, over the disappearance of political parties and

popular election of candidates. For, in a technologically advanced society, there can be no alternatives of governance; only one — functional control. On the old-fashioned country lane, you had a wide choice of alternatives with respect to your behavior with the horse and buggy. You could drive on the left side, the right side, down the middle, or even drive off the road; and you could go at a gallop, a trot, or a walk, or you could stop or back up. On a modern highway, you do not have all those choices; but, unfortunately, you do still have choices as to the speed and manner of your driving. And, because of these choices, we Americans kill upwards of a hundred people a day in traffic and injure several thousands more. On the safe traffic lanes of the future, there will not be alternative choices of behavior while driving. Once you enter a traffic lane, automatic signal devices will take over the operation of your car and control its speed and course. All you can decide is whether to stay on that lane or leave it at some turnoff place ahead. Maybe you feel that you should be blessed with the privilege of having accidents on the highways (the same as Mr. Dulles evidently thinks he should have the privilege of pushing the world into the abyss of atomic war); but, too bad, you will be living in the wrong age for that sort of thing.

Whether you like it or not, you will be provided abundance without toil. You will not have the choice of working hard for a scarcity with an outside gamble that you might possibly strike it rich and be able to live extravagantly without working. Further, you will have little opportunity of dying young of disease, accident, or war; you will almost certainly have to die of old age. You will not have the alternatives of being a slave, a servant, or a master; for, in the society of the future, all will be citizens, equally sacrosanct in their persons and equally privileged to consume.

Opportunities Unlimited

While the alternatives that prevailed during the period of mankind's struggles to rise above the law of the jungle and which continued throughout the tragic barbarian period of internecine conflict that followed, will be plowed under, there will grow forth a fresh new crop of opportunities for individual development and expression.

While in the major operational aspects of the social order, alternatives will no longer prevail, there will be no stifling of life for the individual; rather, there will grow forth an infinite variety of opportunities with respect to details. Among the details of interest and activities, the individual can choose to his heart's content.

—Wilton Ivie, CHQ

There Ought to be a Law

Dear Senator:

I was reading in a magazine the other day where all this automation they are putting in is causing a serious shortage of skilled workers, and they are afraid there won't be enough workers to keep all the machines busy a few years from now. It doesn't seem quite right to me, I mean if you have automatic machines you need more workers than before, but they were some pretty important people who said we would need them, so I guess it must be so.

Also I read where the Japanese are flooding our markets with cut-rate goods which they can make much cheaper over there than we can here in America, because their wages are so low. Then it suddenly dawned on me that these two things could be put together and all our problems would be solved. The Japanese are very skillful; in fact, they are so good they almost licked us in a war. And there are an awful lot of Japanese.

Now this is my idea of what should be done. If you will pass a law making Japan a part of the United States, we would then have all the skilled workers we would need for a good many years, no matter how much automation they install in our factories. It would also stop the Japs from flooding our markets with cheap goods, because, if Japan was a part of the United States, their workers would have to be paid the same minimum wages we pay here, and the goods wouldn't be cheap anymore. Besides, if the Jap workers got paid as much as Americans, they could afford to buy more of the things they produced over there and they wouldn't have to ship them all over here; and they might even buy some of the things we make.

Also if Japan was a state — or several states, whichever way you think it should be —they would be regulated by our Interstate Commerce Commission, and that would make it easier for us to keep their merchandise out. Ever since we got through licking Japan in the war, the Japanese have been awfully friendly to America; and they always wanted to come over here anyway. So, I think if you passed a law like I said, it would be a big help to both Japan and the United States. Please think it over.

Sincerely yours,
(Signed)
Beetal Brayne

'The MOUNTAINEER'

Cadiz, Ohio, January 19, 1956 — The Mountaineer is on the move. Erection of the world's largest shovel, as tall as a 16-story building, weighing 5,500,000 pounds, was completed near here today by Hanna Coal Company, Division of Pittsburgh Consolidation Coal Company. The huge machine started moving from its erection site to its first work assignment. The Mountaineer, as it will be known, in addition to being the largest shovel ever built, is actually the largest unit of mobile land machinery ever constructed in this country. Engineers of the Marion Power Shovel Company, Marion, Ohio, fabricators of the machine, estimate that it is at least 100 times as large as the power shovel commonly seen on neighborhood building projects. This machine will be used to remove earth and rock overburden, averaging 90 feet in depth, from the 4½-foot-thick Pittsburgh coal seam in Eastern Ohio. Although the four large shovels which Hanna has had in service for several years at their open-cut mines are among the largest ever built, they are not capable of removing overburden averaging as much as 90 feet in depth. *The new machine makes possible the recovery of millions of tons of coal not recoverable with the smaller machines.*

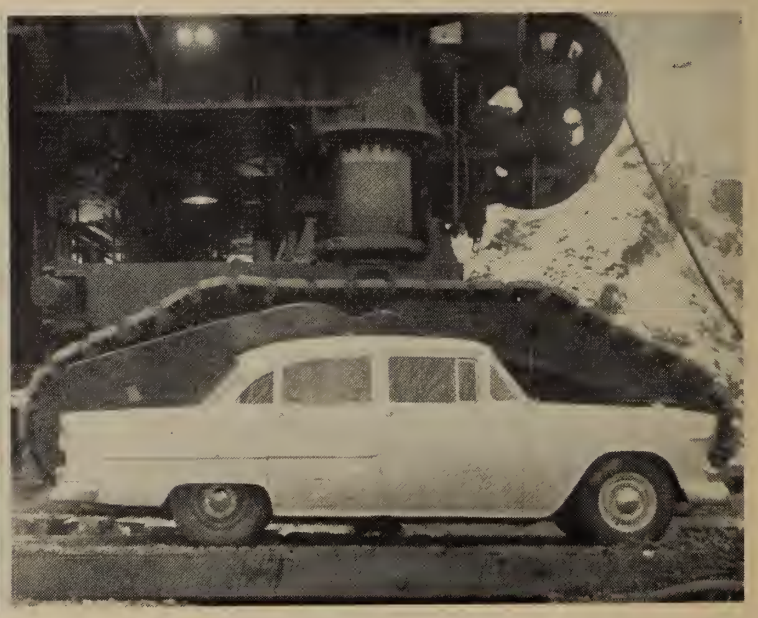
The dipper, or bucket, of the machine has a capacity of 60 *cubic yards.* (*some* 90 *tons*). One dipper-load would fill a room 10' x 20' x 8' high. The shovel will make a complete cycle of digging overburden, making a 180-degree swing, depositing overburden, and returning for another load *once every 45 seconds. At this rate, the machine will handle approximately* 14,400,000 *pounds of material each hour — almost three times its own weight of* 5,500,000 *pounds* (2,750 *tons*). The dipper handle to which the dipper is attached is 92 feet in length.

After each filling of the dipper with overburden, the top portion of the shovel revolves, and the load is deposited in the void left by the previous removal of a strip of coal. The shovel's 150-foot long boom and its 92-foot dipper handle make it possible to deposit this overburden some 290 feet away (about the length of a football field), and to stack it in piles almost 100 feet high. While it is true that the dipper on The Mountaineer (60 cubic yards) is bigger than the dippers on other machines currently in use by Hanna (46 cubic yards), this is not the principal factor which gives the new shovel its increased capacity. Principal factors contributing to this increased capacity are:

1. The 30-foot longer boom and the 32-foot longer dipper handle, which make it possible for

The dipper (left) has a capacity of 60 cubic yards (some 90 tons). One-dipper-load will fill a room 10' x 20' x 8' high. Each of the 8 crawlers (right) upon which the shovel stands and moves, measures 8 feet high, 23 feet long, and 54 inches wide, and each crawler weighs 60 tons.

—Photo Courtesy of Hanna Coal Company



The 'man in the bucket' (left) inspects the king-sized 'jaw' which scoops 90-ton loads in a single bite. This is not a skyscraper (right) but a 'mole's-eye' view of the world's largest electric shovel, 16 stories high.

—Photo Courtesy of Hanna Coal Company

The Mountaineer to remove greater depths of overburden, to deposit it further away, and in higher piles;

2. The increased speed at which the shovel operates in all of its functions makes possible faster operating cycles.

From the ground to the top of the platform attached to the boom, the shovel rises 160 feet into the air — approximately the height of a 16-story building.

Each of the 8 crawlers, or "cats," upon which the shovel stands and moves, measures 8 feet high, 23 feet long, and 54 inches wide, and each crawler weighs 60 tons. Each of the four pairs of crawlers is powered by a 250 H.P. motor.

A unique feature of The Mountaineer is a 3-passenger automatic elevator. . . . Such equipment has never been included in any shovel ever manufactured. This elevator is installed in the 6-foot diameter center pin around which the upper portion of the machine revolves. In boarding all previous machines of this kind, it has been necessary to climb a stairway and to stop the machine while the person on the stairway stepped from the stationary (lower) deck to the revolving (upper) deck. Stopping the machine is objectionable, and the hazard of a person being injured by the machine starting prematurely, or by the person's attempting to step onto the revolving deck while it is in motion, has always been a problem. The elevator on The Mountaineer makes it possible to board the machine safely while it is in operation.

The Mountaineer is powered by 16 General Electric motors, including the largest mill-type horizontal and vertical motors ever manufactured in this country. The total rating of its main A.C. motors is 4,650 H.P. This compares with the 1500 H.P. on Hanna's former "largest" machines. The total horsepower rating of all the motors totals 12,000 — a horsepower rating equivalent to the latest ocean-going freighters, with 80-foot beams, 663 feet long.

Due to the great power requirements of The Mountaineer, it was necessary to supply 7,200 volts of electric power to the machine. This is the highest voltage ever supplied to a machine of this type, the maximum ordinarily being 4,160 volts.

Total peak power demand of the machine will be 6,840 kilowatts. Electrical engineers estimate that, at full continuous operation, the shovel will utilize as much electricity as 5,200 average homes.

In order to control the tremendous power of The Mountaineer, engineers of General Electric designed a system to fit necessary operating requirements and then processed literally hundreds of power formulae to determine the proper one to do the job. *The use of electronic computors enabled General Electric engineers to accomplish this task in a period of two weeks. Manual calculating would have required an estimated three years.*

The Mountaineer has a total lifting power of

some 500,000 pounds (250 tons). This means that it has the power to lift a platform containing 166 1½-ton automobiles 100 feet into the air, swing them through the air a distance of 290 feet, set them down on top of a ten-story building, and swing back for another load — and all of this in 45 seconds.

The two hoist cables which are used to pull the dipper upward through the earth and rock overburden are 2½-inch diameter steel rope, 580 feet long. . . . The herringbone driving gears which operate the twin hoist-cable drum are 13 feet in diameter. The hoisting operation is powered by four 425 H.P. motors.

The Mountaineer is equipped with four automatic, electrically controlled, hydraulic leveling jacks (one at each corner of the lower frame). The purpose of these jacks is to keep the revolving upper portion of the machine absolutely level while operating, even though the machine might be standing on uneven terrain.

Each of some 500 bearings of The Mountaineer is greased automatically. A pump, controlled by an electric timing device, pumps lubricants through a piping system to each of these bearings at pre-determined intervals. This provides much more efficient lubrication than that performed manually.

Only one man is required for actual operation of The Mountaineer. He will control all operating functions of the machine by the use of 2 foot pedals, 2 hand levers and 1 whistle cord. In addition to the operator, the oiler will be used to check the performance of the lubrication system and to perform minor repair work. As it becomes necessary to move the machine forward, one man on the ground will aid in operating and steering the crawler mechanism. A bulldozer will work on the coal seam with the shovel at all times to push fallen earth and rock to where it can easily be reached by the dipper. The machine will operate 3, 8-hour shifts per day.

COVER PICTURE

To its very tip, THE MOUNTAINEER, the world's largest shovel, rises 160 feet into the air (the height of a 16-story building). The machine has a 60 cubic-yard dipper (90 tons), a boom 150 feet long, a dipper handle 92 feet long, a dumping diameter of 290 feet, and a dumping height of 97 feet.

With its lifting power of 500,000 pounds (250 tons) THE MOUNTAINEER has the power to lift a platform containing 166 1½-ton automobiles 100 feet into the air, swing them through the air the length of a football field, set them down on top of a 10-story building, and swing back for another load — and all this in 45 seconds.

—Photo Courtesy Hanna Coal Company

The machine is designed so that it can be operated from either of two operator control cabs, located at each corner of the front of the machine, 3 stories above the ground (it is presently equipped for operation from one cab). The operator's cab is equipped with electric heating, air conditioning, a sliding picture window, vinyl tile floor, and finished with imitation wood paneling.

The shovel is equipped with telephonic communication connected to stations at various strategic points on the machine. It is also equipped with short-wave radio equipment, by which communication is possible with all of the other shovels of the Company, with supervisors' trucks and automobiles, and with the mine office.

Technocracy again salutes that technological progress which minimizes human toil and makes imperative a new social order.

Solar Energy

Automobile Facts — Harnessing the sun's boundless energy has baffled scientists for centuries. Automotive research recently came up with its own formula — a sun-powered model automobile.

Twelve photoelectric cells — made of the element selenium, which has the property of converting light into electric power — are located on top of the 15-inch car. Electric current from the selenium cells operates a tiny motor that propels the vehicle.

Automotive officials emphasize that the "sunmobile" is not now planned as a forerunner of a full-size solar-powered automobile. Today's photoelectric cells cannot produce sufficient horsepower.

The sun-powered model is offered merely to illustrate the possibility of using the sun as a direct power source.

Science — Or?

New York — A chemist issued a challenge to scientists who report that man can communicate in some mysterious brain-to-brain way. Either submit one really controlled experiment, he said, or stop cluttering up scientific journals with your claims.

The chemist, Dr. George R. Price, made his challenge in a recent issue of a scientific publication. He states that his scientific colleagues have been too charitable in pondering the scientific reports claiming to prove that man can read thoughts or words at a distance, can foretell future events and can control by thought physical events.

In 15 years, he said, scarcely a single scientific paper of the work of the parapsychologists has been published.

IT'S NOW OR NEVER

If the United States and the North American Continent are to prevent a complete breakdown in the operation of their high-energy mechanism, they must take immediate steps to develop renewable sources of energy. Time is now of the essence; tomorrow will be too late.

Since the invention of the steam engine by James Watt in 1776 the United States has steadily progressed from an era predominantly depending on animate energy to an age of inanimate energy. This 'evolution' has been at such a rapid rate that today over 98 per cent of the work performed in this country is being done by inanimate instead of muscular energy. In the widest sense the history of the United States and the North American Continent can be told in the story of our ability to control and use energy — the transition from an agrarian to the present high-energy civilization.

During its short history the energy consumption of the United States has catapulted to the point where Americans are now using more than 50 per cent of the world's total energy consumption. With only 6 per cent of the world's population, the United States has the highest per capita consumption of energy in the world. Although this increase in the consumption of energy has resulted in a higher standard of living, it has also brought this nation to the most critical point in its history. The continued rising demands on the remaining energy reserves of the United States have reached the level completely beyond that which our fossil fuels can supply. And the facts indicate that the age of exhaustible sources of energy is rushing to its *finis* with accelerating speed.

A Grim Picture

Since 1914 the United States has used in fuels and minerals more than the entire world consumed in all previous history. No other country in the world has dug into its oil reserves as has the United States. And no other country has become as dependent on petroleum as has this country. According to the National Automobile Club, the United States used 2.8 billion barrels of oil in 1954. (This is equivalent to the present proved reserves of the entire state of Louisiana.) It is becoming more difficult to find new oil wells which will make a substantial contribution to our present rate of petroleum consumption. The American Petroleum Institute informs us that only one out of 44 wells finds an oil field big enough to supply the United States for just four hours. And the odds against finding a 50-million-barrel field — enough to supply the oil needs of this nation for only one week — are 966 to one. To a great extent the obvious shallow sands where oil might be found easily have already been tested. This means that today's wells are being drilled to greater depths at a much greater exploration cost. These facts paint a grim picture in the light of our present and future energy needs.

For the work performed, the transportation system of the United States constitutes the largest conglomeration of inefficiency the world has ever known. The passenger cars, the trucks and the busses of this nation exemplify the most extravagant waste of energy and horsepower in the history of all civilizations. Since 1921 through 1954, motor fuel consumption has increased elevenfold. And from 1941 through 1954 the consumption of motor fuel has doubled, and it is increasing at an alarming rate each year. Instead of doing something to increase the efficiency of our transportation system, the automotive interests are contemplating greater production and increased sales of vehicles (with still more horsepower) to add to the already impossible problem of petroleum consumption and traffic congestion. The promoters of the Price System pride themselves that it has been possible for the automotive industry under a system of 'free enterprise' to produce over 143 million motor vehicles in 55 years; to turn out 70 per cent of the world's car production; to claim one business in six as being automotive; and to be indirectly responsible for there being 400,000 gasoline outlets with 1.4 million pumps in the United States. We know of no faster way of becoming extinct as a great nation than to continue with this false concept that increased production of obsolescence and expansion are synonymous with continued prosperity and a high standard of living when our energy and mineral resources are being depleted at such acceleration.

Many Americans seem to think that if the petroleum situation becomes critical, it will be possible to solve the problem through rationing, similar to that during World War II. But these people do not understand that the magnitude of the problem is much greater, and the conditions are entirely different than at the time gasoline was rationed during the last war. Since rationing, we have consumed billions of barrels of our oil reserves. In the meantime population growth has increased at a high rate; suburban growth has meant more traffic; motor vehicles

traveled 561 billion miles in 1954 as more Americans depended on this form of transportation to get them where they were going and for other reasons; there has been a tremendous increase in the use of trucks to haul supplies, etc.; the consumption of oil by the Armed Forces during 'peacetime' is at an all time high; industrial and agricultural use of oil has skyrocketed; and, of course, our oil is being constantly used in more products. This nation and the Continent are in a too highly vulnerable position to expect that rationing of our oil will solve this problem.

The crystal-ball gazers of 'free enterprise' are assuming that it will be possible for this nation to consume its energy and mineral resources at the present or at a higher rate indefinitely. They are predicting a continuous boom in business and perpetual prosperity based on the present trends at the rate of increase in population growth and expansion of capital goods. The entrepreneurs of maximum profits visualize that the expansion of capital goods will continue at the present or a higher rate, and the population of the nation will increase from the present 165 million to 210 million in 1975, and by the year of 2000 there will be 275 million people in the United States. They surmise that even to maintain present living standards in the face of rapid population growth, industry must produce 10 years from now about 40 per cent more than it does today. As the result of the increase in population and the need for expansion, the Price System chiselers foresee a tremendous jump in the gross national product — the total national output of all goods and services —from the present near $400 billion to $630 billion in 1975, and $1,200 billion by 2000. This would mean an increase in goods and services of 57.5 per cent by 1975, and an increase of 200 per cent by the year of 2000. (These trends are considered to be the same as the actual rate of increase in population and national product over the past 50 years.) While dollars are not an accurate means of measuring goods and services, it is an established fact that the rate of increase in the production of goods and services, volume and tonnage wise, has been tremendous, especially since the end of World War II.

Most Important Fact

But the manipulators of the Price System do not take into consideration the most important basic fact that it is a physical impossibility for the United States or the North American Continent to expand and to consume its energy and mineral resources at the present rate of increase, with our available reserves. There are limitations to our ability and capacity to consume. This is why it becomes imperative for the American people to analyze this most serious problem from a thermodynamic approach.

If we are to continue as a high-energy civilization, we must abandon the outmoded concepts and untenable policies which are squandering our resources. The United States, for example, cannot underwrite most of the 'have not' or underdeveloped nations of the world which are suffering from energy and mineral deficiencies while our own domestic needs for these resources have become critical or 'overdeveloped.' It is sheer folly for this nation to continue dumping its resources at such an extravagant rate around the globe when we consider the energy needs of the United States and the increasing needs of energy supplies throughout the rest of the world. The facts point out that if we continue this policy, we will be committing economic suicide.

The energy consumption of the western world is increasing at a steady level, yet most of these nations do not have the energy supplies to meet their needs. Western Europe, which is considered to be the first line of defense against aggression by the advocates of 'massive retaliation' and 'collective action,' is desperately in need of energy supplies. From 1946 to 1950 her consumption of oil alone went up 90 per cent. While oil furnishes 20 per cent of western Europe's energy needs, she produces only 5 per cent of her own oil requirements. And it is estimated her oil needs will increase to 25 per cent of the total energy she will consume within the next ten years. To make up for western Europe's deficiency of oil, her supplies of crude oil have been augmented by oil from the Middle East. If the present trend of oil consumption in western Europe is to continue, it is estimated during the next 20 years her requirements of petroleum would rise to approximately 4.5 million barrels a day — twice as much as now. *But in order to meet this need for oil supplies, it would take nearly the equivalent of a whole new Middle East.*

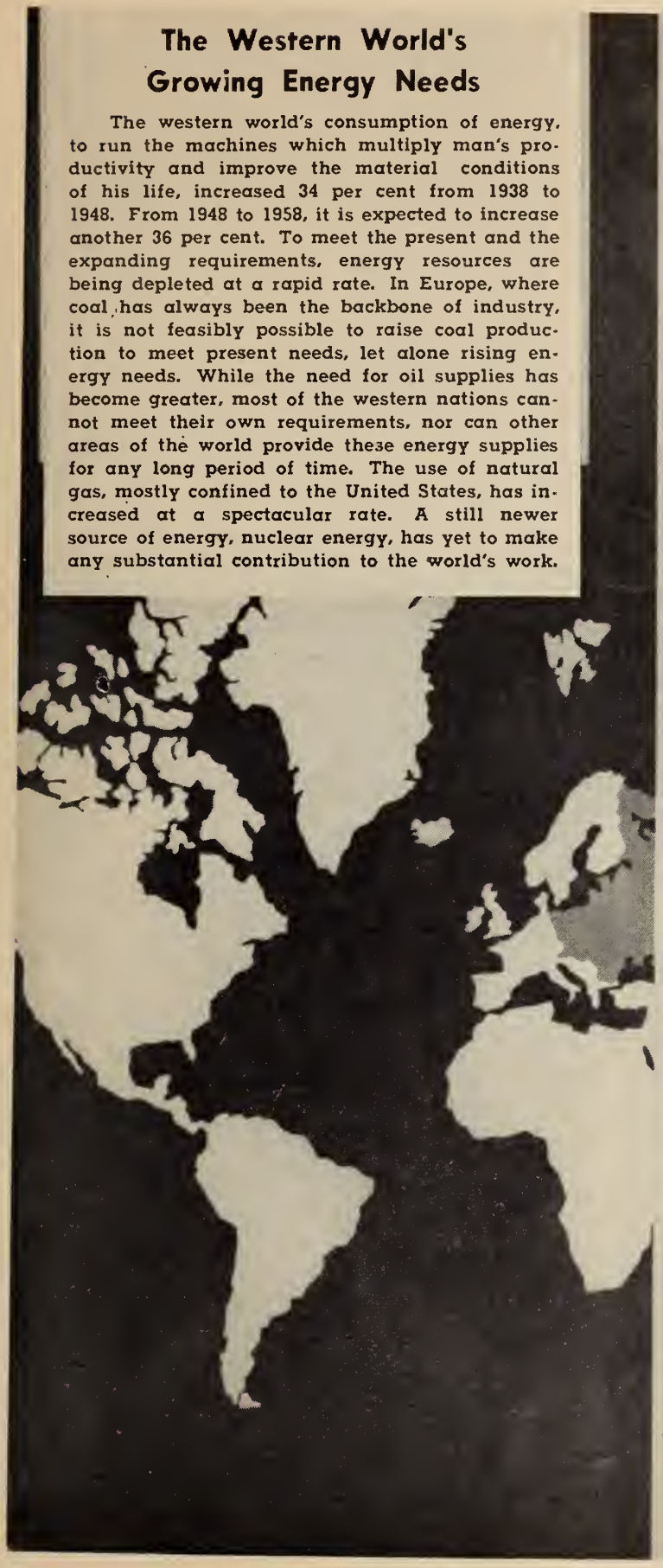
Although oil plays a significant role in the European economy, the backbone of its industrial and domestic operations is coal, supplying about 68 per cent of the energy needs. But the difficulty is to obtain enough coal, as substantial tonnage has to be imported. In western Europe the rich seams of coal are becoming thin, and the mines are getting deeper, thus increasing the cost of mining. In England, it has been necessary to extend the mining of coal farther and farther out under the ocean. Because European factories are producing three-fifths more goods and services in 1954 than 1938, there has been, of course, a proportionate increase in the consumption of coal and other energy supplies. And of western Europe's continuous energy supply, hydroelectric power provides only 10 per cent of this energy need. It is reported that one of the main drawbacks to increasing this source of renewable energy on the Continent is the fact that there is a limited number of sites left for hydroelectric power. There is no doubt about it, the European economy is in a precarious situation.

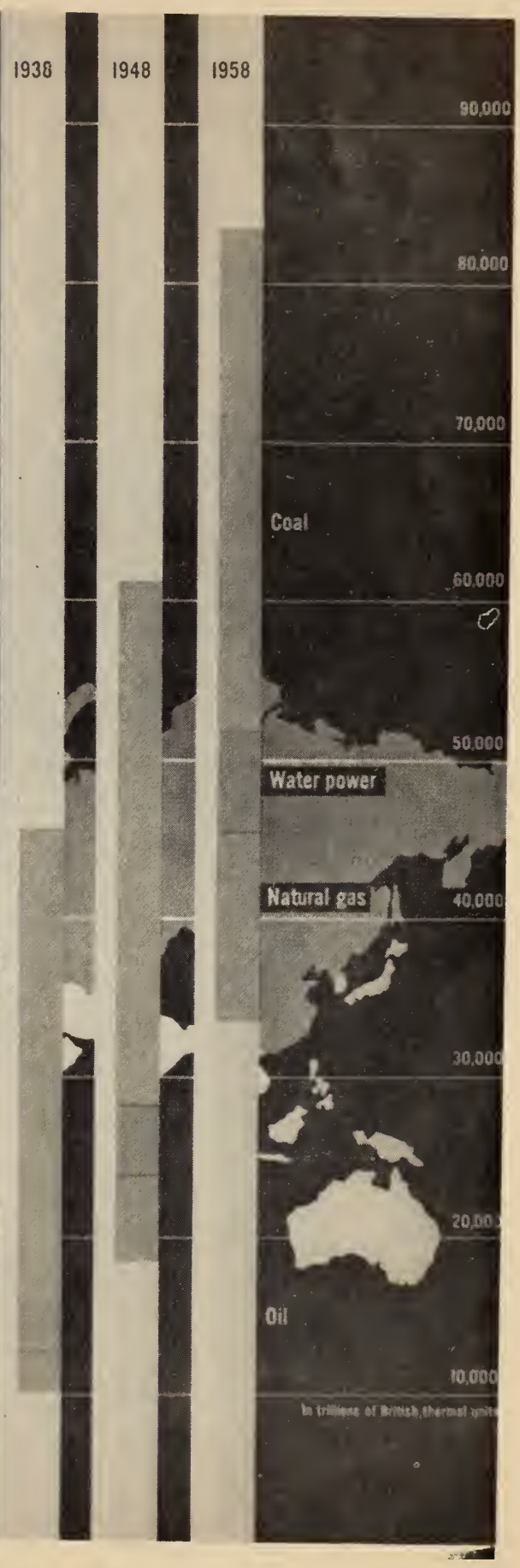
The energy position of the United States has already reached a diminishing point, without this country's taking on extraneous world-wide obliga-

"Painted for The Lamp, Standard Oil Company (N.J.) by W. H. Allner."

The Western World's Growing Energy Needs

The western world's consumption of energy, to run the machines which multiply man's productivity and improve the material conditions of his life, increased 34 per cent from 1938 to 1948. From 1948 to 1958, it is expected to increase another 36 per cent. To meet the present and the expanding requirements, energy resources are being depleted at a rapid rate. In Europe, where coal has always been the backbone of industry, it is not feasibly possible to raise coal production to meet present needs, let alone rising energy needs. While the need for oil supplies has become greater, most of the western nations cannot meet their own requirements, nor can other areas of the world provide these energy supplies for any long period of time. The use of natural gas, mostly confined to the United States, has increased at a spectacular rate. A still newer source of energy, nuclear energy, has yet to make any substantial contribution to the world's work.





tions. Our resource reserves are not sufficient to allow us to become involved in other wars or 'police actions' in various parts of the world. Before attempting to make the world safe for democracy and exploitation by vested interests, we should realize that the energy and mineral resources to fight another war and to maintain the 'peace' will be prodigal indeed. As to energy consumption alone, a single armored division requires 75,000 gallons of motor fuel per day; an aircraft carrier uses 756,000 gallons of fuel oil just for one trip to the Southwest Pacific; and the 'modern' jet airplanes of today consume a high quality fuel at an astronomical rate. And it takes energy behind the lines as well as that required to supply the lines encircling the globe. This is the reason why the United States cannot afford to be drawn into any future Koreas or continue to build and maintain air and naval bases all around the world. (And to think there are those interests in the United States that have tried everything possible to engage us into a full scale war with China.)

Physical Events Force Issue

The same applies to this nation's policy of containing the U.S.S.R. While we become weaker from using our energy resources at a profuse rate, Russia becomes stronger as she systematically uses her resources. The Russians have yet to succumb to our reckless methods of consuming irreplaceable energy and mineral resources. The United States has already consumed a large percentage of its resource reserves, but the U.S.S.R. has hardly touched her underground reserves. And from reports in the press, the prime minister who was 'demoted' to the position of a 'power plant operator' is going ahead at greater speed with the plan of developing a continental grid of hydroelectric power throughout the U.S.S.R. The Russians are going to develop their renewable sources of energy before they consume large amounts of their exhaustible energy reserves. The U.S.S.R. has no intention of bleeding her resources as the United States has and is doing. The implication must be obvious, even if the 'wise men' of the State Department do not comprehend its significance.

It must be readily understood by now that if this nation or Continent continues its present domestic and foreign policy of dumping and destroying our remaining exhaustible resources just for the sake of prolonging the outmoded Price System, this Continent's high-energy civilization will pass into oblivion along with some twenty other civilizations which have declined or failed. Such a possibility should give every American something to ponder over; it must provoke some profound thinking on the part of all socially conscious Americans.

There are many people in this country and in other countries throughout the world that think it is possible for all people to have an 'adequate' standard of living. Among them, Dr. Arnold J. Toynbee prophesies that the twentieth century will be remembered for 'having been the first age since the dawn of civilization, some five or six thousand years back, in which it is *practical* to make the *benefits* of civilization available to the whole human race.' And the echo to Toynbee's sentiments is most prevalent among the advocates of 'one world.' But no matter how 'good' the intentions may be of those people that concur in Toynbee's prediction, there are too many ecological factors involved to lend complete support to the practicality of such theory. We can *believe* that it is practical to make the benefits of civilization available to the whole human race, but what kind of life or standard of living would it actually be? And how long would it last? If the world's per capita consumption of oil were increased to only half of the level used in the United States, the world's proved oil reserves would be exhausted within a decade. If the rest of the world were to increase its energy consumption per capita equal to that of this country, the demand of energy alone would increase tenfold. Even under present trends, the energy needs of the world would increase a hundredfold within the next century.

From all observations, the pressure of physical events is forcing every continent throughout the world to develop its own renewable energy sources, and making it mandatory that each continent operate its contiguous area in accord with the laws of thermodynamics or conservation of energy. The North American Continent is neither immune, nor an exception, to the rule.

If the United States and the North American Continent are to prevent a complete breakdown in the operation of their high-energy mechanism, immediate steps must be taken for a transition into a new social order, which will develop our renewable energy sources and use the remaining exhaustible energy resources in the most efficient manner possible. If we expect to maintain an equilibrium in our present high-energy civilization, and if we aspire to permanency, we must shift the one-sided emphasis placed on our already depleted, irreplaceable energy resources to a greater emphasis on the development and utilization of permanent sources of energy. Time is now of the essence; tomorrow will be too late.

The New Energy Strategy

This transition period must be geared to a new energy strategy which would make drastic changes in the present use of our irreplaceable resources and proceed at a rapid rate to develop and adapt the following constant and renewable sources of energy to the modern industrial society of the North American Continent:

1. *Solar Energy.* It is most probable that solar energy will provide one of the most substantial supplies to our future energy needs. Until now, the actual use of solar energy has been minor, but events will force us to rely more and more on this inexhaustible source of energy. To present some idea of its potential, the solar energy hitting the United States alone is equal to 2000 times the present total heat and power requirements of the country. By

finding ways to utilize just a small fraction of the total solar energy hitting the United States, we will have accomplished much in the way of solving our permanent energy needs. Even under the Price System, solar heating of houses is on the verge of practicality now. Solar energy will no doubt provide most of the energy needed for space heating. And the development of solar energy for power is a promising possibility. By providing sufficient technical personnel, research and know-how, equipment and facilities, and materials for its development, solar energy can become one of the most important sources in maintaining a permanent high-energy civilization.

2. *Water Power.* For years Technocracy has been a voice in the wilderness, proposing that the North American Continent install its design of a Continental Hydrology. In brief, Continental Hydrology is a multiple-purpose design for flood and erosion control, and water for power, irrigation, low-energy-cost transportation, recreation and climatic modification. Although we are concerned with the energy aspects of water power here, Continental Hydrology is designed to play an important part in the ecological scheme of things as well as providing a renewable source of energy. While the North American Continent has one of the greatest water power potentials of any continent in the world, we find under the wasteful Price System the use of water power is almost negligible when compared with the amount of energy used in the United States for all purposes. It is hard to believe that at the rate this nation is depleting its irreplaceable resources, the United States during 1954 consumed 118,411,000 short tons of coal, 66,768,000 — 42-gallon-barrels of fuel oil, and 1,163,526,000,000 cubic feet of gas for electric generation. Of the total generation of electrical energy, in the United States today, water power provides only a little over 20 per cent of the total. It can be seen what a Continental Hydrology would mean in providing a continuous source of energy, and what a tremendous savings it would make in the conservation of our fossil fuels.

3. *Timber and Vegetation.* Through techniques now known, wood can be converted into gas, alcohol or gasoline. And vegetation could supply large amounts of our energy needs. More research on photosynthesis reaction by which plants form vegetation would make us less dependent on soil and water. And through a Continental Hydrology we could build up the fertility of the soil and water supply. Instead of the wasteful practices of the Price System, we would put into effect a long term plan for the conservation of our resources. These sources of renewable energy supplies would remain dependable as long as the social mechanism used only the increment without interfering with the forces directing their formation.

4. *Atomic Energy.* It is an established fact that while the size of the deposits of the fissionable elements uranium and thorium are not yet fully known, they are limited and, like fossil fuels, exhaustible by use. The extent to which atomic energy will become a source of industrial power, replacing or supplementing fossil fuels and falling water, has not been determined. There is the difficulty of control and its effects on the environment which will probably prevent the immediate use of this energy whether it be on a small or large scale. So far, the United States has spent billions of dollars for the development of an atomic energy program which has yet to make any real contribution to our total energy demands; on the contrary, it consumes huge quantities of energy. If we consider the technical personnel, the mineral resources and the energy supplies which have gone into the atomic energy program, we could objectively state that the present atomic energy program constitutes an act of sabotage against the social well-being of this nation and its people. The present atomic energy program of this country is merely a diversion, being used by various interests to prevent any intelligent action being taken for the solving of our own internal problems of distributing the nation's technological abundance. It would be to the best interests of the American people to minimize the atomic energy program and concentrate our efforts on the development and the utilization of permanent sources of energy.

5. *Shale Oil.* Although shale oil is an exhaustible energy resource, we do have in this country probably the largest undeveloped deposits in the world. It is estimated that the Green River formation could provide from 300 to 500 billion barrels of oil if all of it were processed. At the present time the Government has only a demonstration plant to carry on this most important work, but there are reports that the government will shut down this project. Our immediate problem is to develop enough of these plants which would be able to produce a sufficient output of useable forms of fuel and gasoline to supplement our present rate of oil consumption just in case one of the few major producing oilfields would run out of oil as all of them eventually will. The processing of shale oil on a large scale may make it possible for a time to maintain our high-energy mechanism, thus giving this continent more time to make the transition into a permanent high-energy civilization. But it would involve the handling and processing of millions of tons of shale *per day*.

6. *Population Growth.* There is a close correlation between population density and the total energy consumed by a nation. In 1948 the United States, with a population density of about 50 people per square mile, devoted 27.7 per cent of the total energy consumed to transportation. The density of population affects the expenditure of energy to maintain and establish the civilizing contacts. By controlling and planning the growth of population, as well as centralizing the population in a vertical mode of living (Urbanates), it would be possible to reduce the energy cost of operating the social mechanism and at the same time provide a standard

of living at the highest possible level. As aptly stated, 'Well-being is apt to suffer when the cake must be cut into many slices.'

7. *Other Sources of Continuous Energy.* There are other sources of continuous energy — tides, wind, heat pumps (heat is moved from earth to house), utilization of ocean temperature differences, etc. — upon which research could be done to determine their potential.

Price System Breeds Waste

While there are no scientific restrictions to installing a Continental plan designed to meet this most critical and urgent problem of developing renewable energy sources, there is the obstacle of the present mode of social operation, the Price System. Being dedicated to maximum waste for the sake of maximum profits, the Price System is not compatible with the conservation of our energy and mineral resources. The operators of the Price System are concerned with perpetuating their advantageous positions by maintaining the status-quo of 'free enterprise,' regardless of its inefficiency or obsolesence. To be specific, the oil, coal, and natural gas interests will not allow the development of any source of energy which would reduce or interfere with their lucrative racket, no matter how urgent the need for the development of such energy sources. For years the development of one of our most important sources of renewable energy from falling water has been withheld and compromised for the sake of financial and political expediency. At no time under the Price System has the importance of hydroelectric power been considered from the standpoint of its necessity for the maintenance of our high-energy civilization and the conservation of our irreplaceable resources.

In less than two centuries, the 'robber barons' of 'free enterprise' have wrought destruction to the once richest endowed nation on earth. Disregarding the laws of ecology, the Price System has foolishly blundered this nation into the loss of millions of acres of top soil through soil erosion. It has dwindled our water supplies and lowered the water table; ruthlessly cut our timber; used faulty methods of farming and grazing; abused the rivers and brought floods. For maximum profits the promoters of the Price System have squandered, destroyed and dumped the largest proportion of our high-grade mineral resources. And the Price System operators have channeled most of the technical personnel and research of this nation into finding new ways and means to use our remaining irreplaceable resources. The fact that the Price System has not used our available resources of energy to the fullest and in the most efficient manner possible should be evidence to every American that it does not intend, even if it could, to conserve America's remaining energy reserves or develop inexhaustible energy sources for the present and future welfare of the North American Continent. Let's face it: The Price System breeds waste and eventual annihilation!

Time for Transition

How long can this Continent continue to consume its energy and mineral resources at the present extravagant rate and still continue to operate a high-energy civilization? That is the question. If the Price System is to continue it must expand at a compound rate, but, as previously mentioned, this is a physical impossibility because the resources are not available. This leads to a far more serious observation. If the American people must wait until the Price System ceases to operate or the pressure of physical events forces them to apply a new method of social operation, whichever comes first, will we have a sufficient supply of useable forms of energy which will be necessary to maintain the *present* high-energy mechanism and the time for the transition into a permanent high-energy civilization based on renewable energy sources? For the welfare of this Continent and the American people it would be the most intelligent thing to make this transition now rather than wait until the Price System eliminates itself, and, in all probability, brings great devastation upon this Continent. Technocracy presents the design for the transition into a permanent highly-industrial society, but the decision whether we make this transition is yours. The fact that this transition will have to be made in the near future brings up the question, why not now? In all probability, it's now or never.

—Clyde Wilson, Section 2, 11833

Farm Journal — A wheat farmer and his son experimented for 10 years with several driverless devices, but finally worked out a system of cables that makes possible the operation of the combine and the "cat" by one operator.

He explains "there are six control levers to handle the 'cat' and six more for the operation of the combine. The operator is happy to have full control of both outfits.

"The controls were built in our shop at a material cost of less than $75," he said.

Washington, (INS) — The International Cotton Advisory Committee predicts that production and supplies of cotton for the 1955-56 marketing year will be at record levels.

This forecast by the agency representing 32 producing and consuming countries only serves to confirm conclusions already arrived at by the Agriculture Dept. and private trade sources in the United States.

Abundance seems to be no respecter of traditions.

FALSE PROSPERITY

As the Joint Economic Committee of the Congress prepares for an extended probe into the subject, it releases figures to show that one fifth of all American families have an annual income of less than $2000.

In scanning the Congressional revelation about low incomes of American families, we should not overlook the fact that most of these families have more than one wage earner. Sometimes the combined labor of husband and wife and one child, or more, do not amount to $40 per week.

Not mentioned is the number of families where the husband, wife and one child's, or more, total earnings amount to more than $40 per week; but not much more. There are as many families where the wages of the chief bread winner is less than $2000, but where the family income is augmented by other members of the family until it reaches $2500 or $3000, but all of them are working at substandard wages.

We must not forget that the Congressional inquiry concerns the one-fifth of all families with a total family income of less than $2000 per year; and that does not mean the establishment of a $38.50 weekly wage, but rather it is the total of all family income, including interest on money in the bank, or on savings bonds of the United States, etc., if any.

One thing which has contributed to the increasing average weekly wage rate of those employed during 1954 and the first half of 1955 is not mentioned.

The records show the increase but do not explain it. A sensible person can reason it out. Late in 1953 and early in 1954, large numbers of workers were laid off. Generally speaking, the workers with the least seniority got the ax. They also are the lower paid workers, generally speaking, excepting craftsmen in the building trades, etc.

In the manufacturing industry, still generally speaking, the lower paid were laid off, and the higher paid remained at work, consequently the average of the higher paid during the depression of 1954, and 1955, was bound to rise because the lower paid laid off workers were not counted in the average.

But — the average of the lower paid was reflected in the number of checks paid the unemployed, because those checks were figured on the amount of wages the workers made before they were laid off.

The Congressional committee has released this preliminary report to show an alarming situation throughout the nation, where family income *is less than* $2,000 *per year for one-fifth the nation's families.* This preliminary report is only the beginning.

When the probe begins to hit on all 16 cylinders, and information is accumulated, it will be revealed that two-fifths of the workers in the nation get less than $40 per week. This will be actual, and not average. *It will be shown that two workers in every five are paid less than* $40 *per week in wages and salaries.*

The *Baltimore Sun* stresses the fact that twelve years ago 25 per cent of the families had an income of less than $2000 per year, and now things are better, because only 20 per cent are thus on the verge of poverty.

This is not correct reasoning unless the dollar bill will purchase as much today as it did twelve years ago. Twelve years ago there was a war, and ceilings were in effect on rents, on foodstuffs, and because of general scarcity one could not buy many other items. Twelve years ago $2000 would go farther than $4000 would go today in our new civilized society.

So that in the intervening twelve years, the increase in the cost of living means that conditions are much worse today.

It is well to re-emphasize the fact that the Congressional committee report shows the $2000 figure to be a maximum figure and not an average figure, and that many, many families got about only half that total per year, or less.

It is interesting to note that twelve years late, the *Baltimore Sun* comes up with the information that war wages were not so high as the dailies of the nation so often reported. There were all sorts of reports to show that workers got such high pay that the soldiers and the sailors were the only patriots.

Now we learn that fully 25 per cent of the families of the nation got no more out of the defense effort than an income often way down below forty bucks a week, proving once again that war is a rich man's war and a poor man's fight.

—J. J. Tahaney, Labor Herald

London, Jan. 13 (UP) — A British scientist today claimed to have invented a frictionless automobile engine *that can run* 200,000 *miles without overhauling.*

Millionaire inventor George Bradshaw said that floating double-ended pistons between gases in cylinders made the engine possible.

He said the engine is air cooled and can run on any fuel.

"I can build it any size — even 1000 horsepower," he added.

While it would be to the social welfare to build cars or engines which would conserve our irreplaceable resources, it is not good business to build cars which will last or require few parts and operate at a high rate of efficiency under a system of private enterprise. Can you imagine the Big Three of the automobile industry and the 'big' independent producers, and Standard Oil and other oil cartels, favoring the introduction of such a car on a mass-production basis?

CORRECTION

In our last issue, No. 176, December, 1955, the illustration on page 14 should read courtesy of Techphoto.

Progress Never Stops

University of California, Berkeley — The discovery of a new atomic particle, the antiproton, which may inaugurate a new era of nuclear research, was announced jointly last night by the University of California and the Atomic Energy Commission.

The announcement was made here by Dr. E. O. Lawrence, director of the University's Radiation Laboratory, . . . and in Washington, D. C., by the Atomic Energy Commission.

The antiproton, sometimes called the negative proton, a nuclear ghost which has haunted the world's physicists for a generation, was created from energy generated in the giant Berkeley Bevatron, the most powerful atom smasher in the world.

. . . Discovery of the antiproton fulfills one of the important purposes for which the AEC spent some $9,500,000 in Bevatron construction costs, plus annual research budgets, said Dr. Lawrence, inventor of the cyclotron.

. . . "Recalling that at the beginning of the past quarter century the discovery of the positive electron set off the remarkable developments in nuclear physics that followed," Dr. Lawrence said, "one cannot help but wonder whether the discovery of the antiproton . . . likewise is a milestone on the road to a whole new realm of discoveries in high energy physics that are coming in the days and years ahead."

New Shipping Method

Chicago — A six-foot sealed aluminum cube, containing 6,000 pounds of frozen peaches, strawberries, broccoli, spinach and other delicacies, was loaded into a boxcar yesterday. Eventual destination: Caracas, Venezuela.

More than a month from now, when it is unloaded at a Caracas supermarket, the icy package still will be well below zero, although at no time during the long journey via railroad, steamship and truck will it be subjected to any kind of refrigeration.

This guarantee of performance is made by Libby, McNeil and Libby, the fruit and vegetable packer, which has been working on the new shipping container for more than four years.

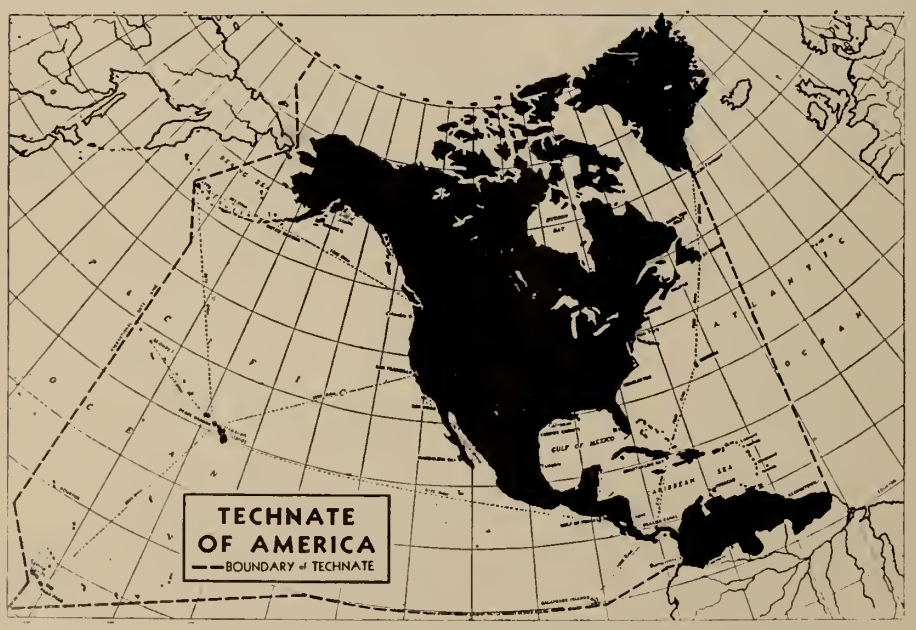
The new shipping method, developed by W. L. Morrison, involves bringing the packages of frozen foods to a level 150 degrees below zero by using liquified nitrogen, itself 300 degrees below zero. This is a fairly simple process and takes about an hour, according to Libby technicians.

The packages at the center of the container serve as a battery of cold, radiating out to counteract the heat trying to get in. Tests show that cartons similar to the one being shipped to Venezuela can go unrefrigerated for 40 to 41 days before the temperature goes up from minus 150 degrees to zero.

The big advantage of this method is in shipping costs. Another factor is the prevention of deterioration between freezer and store, using present methods.

Libby officials state that they have no intention of invading the refrigerated shipping business.

The Technate of North America



Industrially, and from the point of view of resources, the North American Continent comprises the most nearly self-sufficient high-energy industrial area on the earth's surface. When the tropical vegetation of Mexico, Central America, and the West Indies is combined with the temperate products of the United States and Canada, very little in the way of vegetable products need be obtained from the outside world. Likewise, when the mineral products of this area, chiefly the United States and Canada, are pooled for a common industrial operation, an almost complete mineral independence is achieved. Geographically and industrially, therefore, the North American Continent comprises a natural unit.

THE TECHNATE OF AMERICA

POPULATIONS (a)	PRESENT COUNTRIES	SQUARE MILES — LAND	INLAND WATER	TOTAL AREA
220,000	Alaska	571,065	15,335	586,400
40,000	Bermuda	19	2	21
470,000	British Guiana	76,185	7,027	83,212
76,000	British Honduras	*	*	8,868
2,965,000	British West Indies (b)	11,776	336	12,112
15,195,000	Canada	3,610,097	235,677	3,845,774
12,381,000	Colombia	432,880	6,950	439,830
915,000	Costa Rica	19,405	290	19,695
5,807,000	Cuba	*	*	46,736
2,347,000	Dominican Republic	18,530	113	18,643
2,122,000	El Salvador	7,584	448	8,032
29,000	French Guiana	34,767	568	35,335
1,500	Galapagos Islands	2,868	97	2,965
25,000	Greenland	*	*	(c)840,000
3,149,000	Guatemala	41,077	965	42,042
3,227,000	Haiti	10,444	270	10,714
530,000	Hawaiian Islands	6,440	16	6,456
1,608,000	Honduras	41,761	1,516	43,277
468,000	Martinique & Guadeloupe	1,108	4	1,112
28,848,000	Mexico	*	(d)	762,392
184,000	Netherlands West Indies (g)	380	4	384
1,202,000	Nicaragua	53,688	3,495	57,183
11,500	Pacific Islands (Misc.) (e)	*	*	421
886,000	Panama	*	*	28,752
58,000	Panama Canal Zone	362	191	553
2,250,000	Puerto Rico	3,423	12	3,435
5,000	St. Pierre & Miquelon	89	4	93
114,000	Samoan Islands (f)	*	*	1,594
220,000	Surinam (Dutch Guiana)	53,598	1,568	55,166
162,409,000	United States	2,974,726	94,689	3,069,415
5,662,000	Venezuela	347,228	5,114	352,342
25,000	Virgin Islands	132	1	133
253,450,000	TECHNATE TOTALS	10,006,000	377,000 *plus*	10,383,087
2,647,110,000	WORLD TOTALS	51,100,000	1,100,000	(h)52,186,522

Technate, percentage of world population	**9.5%**
Technate, percentage of world area	**19.8%**
Technate, people per square mile of land area	**25.3**
Rest of World, people per square mile of land area	**58.2**

* Breakdown of land and water areas not published.

(a) Mid-1954 estimates.

(b) Including Trinidad, Tobago, Bahamas, Jamaica, Windward and Leeward islands.

(c) Of which 131,930 sq. mi. is ice-free land.

(d) Inland water area of Mexico has never been calculated; the 15 largest lakes have an aggregate area of 2,381 sq. mi.

(e) U.S. possessions, 734 pop., 33 sq. mi.; British and New Zealand possessions, 10,638 pop., 388 sq. mi. (East of International Date Line only).

(f) U.S., 22,000 pop., 76 sq. mi.; New Zealand, 92,000 pop., 1,518 sq. mi.

(g) Including Curacao and Aruba.

(h) World areas exclude the Antarctic Continent, approx. 5,100,000 sq. mi.

(This is an up-to-date revision of Table I in the Study Course Book. Compiled from various authoritative statistical publications of United Nations, United States, and Canada.)

New Mystery Car

London, Jan. 9 — A motorcar that can move sideways like a crab for parking, that can go as fast backward as it can forward, that takes to water like a duck.

These are some of the more fantastic claims put forward for the Ferguson car, said to be the most revolutionary advance in motorcar design since the Model T Ford.

It is the brain child of 71-year-old multimillionaire Harry Ferguson, once known as Britain's tractor king, who has been perfecting the wonder car for the past two years.

Although details of the Ferguson car are a closely guarded secret, enough information has leaked out for experts to discount the crablike and ducklike qualities claimed for the vehicle.

They are agreed, however, that:

The Ferguson car makes clutches, gear-boxes and driveshafts and even conventional brakes obsolete as the horse.

The new car can go over a plowed field as smoothly as a conventional automobile can roll down a superhighway.

Drivers of Ferguson cars never fear skidding, for this would be an impossibility with the radical new braking principle employed.

Although it has been hailed as a "people's car" and "Britain's answer to the Volkswagen," the Ferguson car is not so much a new type of motorcar as it is a system of transmission, braking and suspension.

It could be used in every type of vehicle from economy "baby" cars to the biggest multiwheeled trucks, according to its backers.

Few people — the duke of Edinburgh is one — have seen the Ferguson car in action, but an account of its performance, at recent trials witnessed by British army engineers, has leaked out.

According to this account, the car was raced at 70 m.p.h. over an ice-glazed road without skidding. Then without slackening its speed it headed straight for a brick wall. Observers closed their eyes and steeled themselves for the inevitable crash, but instead of the familiar agonized yelp of rubber on macadam followed by a shattering crash, the car stopped with a yard to spare between itself and the wall.

As nearly as motoring writers can make out, in the Ferguson car the new function of the engine — gasoline or diesel — is to drive an oil pump. A special transmission fluid is pumped along pipes and fed into small turbine-type motors.

The motors drive the wheels — four or two as desired — through short, jointed shafts or can be built into the wheels themselves. The harder the driving-fluid is pumped through, the firmer and faster spin the wheels.

Conventional brakes are out. To stop the car the fluid is pumped the other way around. The wheels come firmly to a halt, and they cannot lock or skid.

If the fluid is pumped backward continuously the car goes into reverse. *The new transmission is said to give 30 per cent more efficiency.*

Old Stuff to the Technocrats

For more than twenty years, Howard Scott, Director-in-Chief of Technocracy, has been describing, in public meetings and in discussion groups, a highly efficient design of automobile, with particular reference to the engine and propulsion mechanism. The design included an air cooled, opposed piston; pancake engine in the rear; with fluid drive in all four wheels. It involved forced injection of the fuel directly into the combustion chamber; and it dispensed with carburetors, radiators, transmission gears, differentials, cross axles, and brakes. The four wheels could each be operated independently of the others, so that the car could be turned around in a space scarcely larger than its own length, and it could be parked sidewise.

Now, Ferguson of Britain has announced a 'revolutionary new mystery car' which will operate on the same basic principle; however, it is not nearly as far advanced as Technocracy's design. The moral of this story is: If you have the best idea in the world and hold on to it long enough, someone, somewhere, is going to make use of it.

—Techno Critic, Technocratic Trendevents

CHANGE OF ADDRESS

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TECHNOCRACY

North America's Only Social Dynamic

WHAT?

Technocracy is the only North American social movement with a North American program which has become widespread on this Continent. It has no affiliation with any other organization, group or association either in America or elsewhere. The basic unit of Technocracy is the chartered Section consisting of a minimum of 50 members and running up to several hundred. It is not a commercial organization or a political party; it has no financial subsidy or endowments and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are $6.00 which are paid by the member to his local Section. Members wear the chromium and vermillion insignia of Technocracy—the Monad, an ancient generic symbol signifying balance.

WHEN?

Technocracy originated in the winter of 1918-19 when Howard Scott formed a group of scientists, engineers, and economists that became known in 1920 as the Technical Alliance — a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934 Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundation of the present Continent-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHERE?

There are units and members of Technocracy in almost every State and in every province in Canada, and in addition there are members in Alaska, Hawaii, Panama, Puerto Rico and in numerous other places with the Armed Forces. Members of Technocracy are glad to travel many miles to discuss Technocracy's Program with any interested people and Continental Headquarters will be pleased to inform anyone of the location of the nearest Technocracy unit.

WHO?

Technocracy was built in America by Americans. It is composed of American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this Continent. Membership is open only to American citizens. Aliens and politicians are not eligible. (By politicians is meant those holding elective office or active office in any political party.) Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher, or housewife—so long as you are a patriotic American—you are welcome in Technocracy.

The TECHNOCRAT

Offering to the American public a medium by which it can learn the facts regarding the transition period in which we are moving toward a New America of technological abundance.

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WHICH WAY?

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Bunglers and misguided self-seekers can plunge us down to the depths where man will have to begin anew the struggle to regain the capacity to overcome and utilize the forces of nature for the good of all society. Our entire civilization is at stake with only a small minority on guard against destruction.

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